Maintenance Manual

Expert (t) 2000 TM

labrie environmental group

equipment for the solid waste industry

LABRIE LEACH WITTKE Juggler INDUSTRIAL LIFTERS

EXPERT® 2000

MAINTENANCE MANUAL

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Part # : 55379

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INTRODUCTION

ABOUT THIS MANUAL

The current manual is designed to help qualified maintenance personnel through repairing, servicing and maintaining the Expert(t) 2000™.

What You Will Find in this Manual

Only maintenance of the body and packer components are outlined in this manual.

What You Will Not Find in this Manual

- *For maintenance of the chassis*, refer to the chassis manufacturer's service manual;
- *For details on options* such as camera, tag axle, and backing-accidents prevention systems, refer to the optional material manufacturer's service manual;
- *For details on operation of the* Expert(t) 2000™, refer to the Expert(t) 2000™'s Operator Manual;
- *For details and schematics concerning body parts*, refer to the Expert(t) 2000™'s Parts Catalog.

INTRODUCING THE EXPERT(T) 2000™

The Expert(t) 2000™ is a side-loading refuse collection vehicle. It is designed and built to aid in the manual collection of different types of refuse by only one operator.

- Expert(t) 2000™ units equipped with a lifting arm are primarily designed to be operated by only one person.

  If, however, the end user elects to operate the unit with more than one worker, the following safety items shall be installed to protect the co-worker from hazardous situations.

  For example, an additional set of sustained manual pressure controls for each additional worker shall be provided. The actuation of the controls shall take place concurrently in order to operate the Helping-Hand™ lifting arm. The sustained manual pressure control shall be located so that the co-worker pressing it, is not in the path of the arm and has a clear and full view of the point of operation.

- In such a case, Labrie Environmental Group must be informed of every and all units equipped with a lifting arm operated by more than one worker. Labrie Environmental Group will then determine and supply, at the customer's expense, the required safety items.

- Please contact the Labrie Customer Support Center at 1-800-231-2771 for additional information.

⚠ DANGER

FAILURE TO CONTACT LABRIE ENVIRONMENTAL GROUP TO REPORT A TWO-OPERATOR USE OF THE UNIT MAY RESULT IN UNIT AND / OR PROPERTY DAMAGES, PERSONAL INJURY OR EVEN DEATH.

The Expert(t) 2000™ is a unit that, depending on the type of collection it will be used for, appears in three main categories: manual, semi automated, and automated. The Expert(t) 2000™ always allows for manual collection, that is, in whatever configuration the product is built, manual collection is available.

Also, the Expert(t) 2000™ exists in what is called a "co-mingle" version where the body is splitted in half to create two

separate compartments for the collection of two different types of load.

Expert(t) 2000™ for Manual and Automated Collection

ALL Expert(t) 2000™ vehicles are designed with a lowered hopper to allow easier manual collection.

That is, instead of having the body on top of a straight frame chassis, they have it on top of a chassis frame that has been modified and lowered at the hopper area. Therefore, the hopper is at a more friendly height for the manual collection of waste bags and other refuse.

Figure 1. **Expert(t) 2000™ for manual and automated collection**

SOME Expert(t) 2000™ vehicles are equipped with an automated arm called Helping-Hand™ for collecting waste from roller carts.

SERVICE AND MAINTENANCE ON THE EXPERT(T) 2000™

Maintenance on the Expert(t) 2000™ is of outmost importance to ensure a longer durability of all its parts and an optimal performance in the field. Maintenance has to be done on almost every system involved in the operation of the Expert(t) 2000™ such as the hydraulic, electrical, and mechanical systems. There are parts submitted to more repetitive and intensive activity than others, therefore, a more often and dedicated maintenance is required on them.

In this manual, you find the most common maintenance and inspection procedures needed on the Expert(t) 2000™.

CONTACTING LABRIE ENVIRONMENTAL GROUP

Plant information

Address 175 du Pont
St-Nicolas (Quebec)
CANADA G7A 2T3

Phone: 1-800-463-6638
(418) 831-8250

Fax: Sales Dept.:
(418) 831-5255

Service & Warranty:
(418) 831-1673

Parts:
(418) 831-7561

Labrie Customer Support Center

Address 54 Park Place (Upper)
Appleton, WI 54914

Hot Line Technical Support,
Service & Warranty:
24-Hour Service
1-800-231-2771

Parts:
8 am through 7 pm ET
1-800-231-2771

Web Site: www.labriegroup.com

E-mail: sales@labriegroup.com

IMPORTANT

FOR TECHNICAL SUPPORT AND PARTS ORDERING, THE SERIAL NUMBER OF YOUR VEHICLE IS REQUIRED, THEREFORE, LABRIE ENVIRONMENTAL GROUP RECOMMENDS TO KEEP RECORD OF THE INFORMATION FOUND ON THE VIN PLATE WHICH IS LOCATED IN THE CAB.

SAFETY

Being a heavy duty vehicle, the Expert(t) 2000™ implies a number of safety issues. Such issues, along with all necessary safety instructions and conventions, are presented in this section of the *Maintenance Manual*.

SAFETY CONVENTIONS

⚠ DANGER

INDICATES AN IMMINENTLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, **WILL** RESULT IN DEATH OR SERIOUS INJURY.

⚠ WARNING

INDICATES A POTENTIALLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, **COULD** RESULT ON DEATH OR SERIOUS INJURY.

⚠ CAUTION

INDICATES A POTENTIALLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, **MAY** RESULT IN MINOR OR MODERATE INJURY.

Responsibilities of the Employer

In accordance with ANSI Z245.1 1999 Standards, it is the responsibility of the employer:

- To ensure the operation of the Expert(t) 2000™ is in accordance with all safety requirements and codes, including all applicable regulations, the Occupational Safety and Health Act (OSHA) and the American National Standards Institute (ANSI).
- To ensure the employees are qualified for the operation of the equipment and take all safety measures before working with this equipment.
- To properly maintain all mobile equipment to meet all provincial/ state and federal safety standards.
- To supply adequate instructions and training for the safe use of the

vehicle before assigning the employee to such equipment.

- To keep the vehicle maintained and properly adjusted to meet the manufacturer's standards and recommendations. For help or more information, contact the manufacturer or any authorized representative.
- To keep record of any breakdowns or malfunctions of the vehicle as well as any inspection and maintenance.
- To ensure the repair of any failures or malfunctions that may affect the safe use of the vehicle, always before it is used again.
- To meet the appropriate lighting requirements for night shift work (if permitted).
- To regularly accompany the operator of the vehicle and take measures to ensure the smooth and safe operation of the vehicle.
- To make sure that the backup alarm works properly while the vehicle is in reverse.
- To take the necessary measures that follow a damage or malfunction report from any employee.
- To establish and ensure the application of a "Lockout/Tagout Procedure" at the time of any inspection, repair or maintenance to the vehicle, whether it takes place on the road or in the garage.

⚠ WARNING

PRIOR TO PERFORMING ANY MAINTENANCE ON THE VEHICLE, ALL SAFETY REGULATIONS MENTIONED IN CHAPTER 1 OF THE *OPERATOR MANUAL*, MUST BE RESPECTED, ESPECIALLY THE "LOCKOUT/TAGOUT" ON PAGE 6.

⚠ CAUTION

MAINTENANCE AND REPAIRS CARRIED OUT ON THIS VEHICLE MUST ONLY BE DONE BY QUALIFIED PERSONNEL WHO IS FAMILIAR WITH THE EQUIPMENT. LABRIE ENVIRONMENTAL GROUP DECLINES ANY RESPONSIBILITY FOR FAILURES RESULTING IMPROPER REPAIRS PERFORMED BY THE END USER.

Responsibilities of the Employee

In accordance with ANSI Z245.1 1999 Standards, it is the responsibility of the employee:

- To enforce all safety measures to meet the requirements established by the employer.
- To operate the Expert(t) 2000™ only after having received instructions and training in accordance with the *Operator Manual*.
- To immediately report to the employer or supervisor about any damage or malfunction of the vehicle.
- To make sure that there is nobody near the vehicle before activating any of the controls and be prepared to stop everything upon the existence of possible danger.

⚠WARNING

PRIOR TO PERFORMING ANY MAINTENANCE ON THE VEHICLE, ALL SAFETY REGULATIONS MENTIONED IN CHAPTER 1 OF THE *OPERATOR MANUAL*, MUST BE RESPECTED, ESPECIALLY THE "LOCKOUT/TAGOUT" ON PAGE 6.

⚠CAUTION

MAINTENANCE PERSONNEL SHALL NEVER PERFORM ANY MAINTENANCE ON THE EQUIPMENT IF THEY ARE NOT WELL ACQUAINTED WITH THE OPERATIONS OF THE EQUIPMENT AS WELL AS ALL SAFETY PRECAUTIONS OF SUCH OPERATIONS. REFER TO THE OPERATOR'S MANUAL BEFORE ATTEMPTING TO PERFORM ANY TYPE OF WORK ON THE UNIT.

⚠ CAUTION

MAINTENANCE AND REPAIRS CARRIED OUT ON THIS VEHICLE MUST ONLY BE PERFORMED BY QUALIFIED PERSONNEL WHO IS FAMILIAR WITH THE EQUIPMENT. LABRIE ENVIRONMENTAL GROUP DECLINES ANY RESPONSIBILITY FOR FAILURES RESULTING IMPROPER REPAIRS PERFORMED BY THE END USER.

LOCKOUT/TAGOUT PROCEDURE

The *Lockout/Tagout Procedure* procedure must be applied to render the vehicle out of service and thus ensure its safety and that of those who will be around it.

⚠ DANGER

NEVER PERFORM ANY REPAIR OR MAINTENANCE ON A VEHICLE THAT HAS NOT BEEN UNLOADED.

To lock out and tag out the Expert(t) 2000™:

1. Apply the parking brake. See Figure 2. “Parking brake knob” .

Figure 2. **Parking brake knob**

2. Turn the pump switch on the console (PTO switch) to the **OFF** position.
3. Stop the engine.
4. Remove the key from the ignition switch.
5. Put the key in a safe controlled area.
6. Put adhesive tape on the ignition switch keyhole.

Note: ***If the Expert(t) 2000™ is equipped with a master switch on the battery set, you must turn it off. See Figure 3. "Master switch location" .***

Figure 3. **Master switch location**

7. Put an "Off Service" tag on all steering wheels.
8. Put an "Off Service" sign in the windshield.
9. Block any system that could move by gravity with a proper and visible safety prop (open tailgate, raised body, etc.)
10. Release any residual pressure from the hydraulic and pneumatic system. Refer to "Air Tank Draining Procedure" on page 30 for details.
11. Move all control levers to release any residual pressure from the system.
12. Chock wheels on both sides to prevent the vehicle from moving.
13. Disconnect the following items if any type of welding is required:
    - Battery[1]
    - ABS module (anti-lock brake system)[1]
    - Electronic transmission (ECU)[1]
    - Electronic engine module (ECM)[1]
    - Intermittent wiper module[1]

1. Refer to the chassis manufacturer service manual to locate electronic components.

PROTECTION AGAINST FIRE

It is mandatory to have an ABC-type fire extinguisher easily accessible from both, outside and inside the cab.

⚠CAUTION

ALWAYS MAKE SURE THE HOPPER AND/OR BODY OF THE EXPERT(T) 2000™ IS EMPTY BEFORE SERVICING IT, SINCE EXPLOSIVE AND/OR FLAMMABLE OBJECTS, SUCH AS TELEVISION TUBES, FLUORESCENT TUBES, CANS UNDER PRESSURE, ETC. MAY HAVE BEEN COLLECTED. FAILURE TO EMPTY THE HOPPER AND/OR BODY OF THE EXPERT(T) 2000™ MAY RESULT IN UNIT AND/OR PROPERTY DAMAGES, PERSONAL INJURY.

If, for any reason, the maintenance personnel has to work on equipment that has not been unloaded, for any type of work, a fire extinguisher (see Figure 4. “Fire extinguisher location”) should be made readily available and close to this vehicle. Anytime a loaded vehicle is inside a garage, there shall be a fire extinguisher very close nearby.

The employer must inform and train all personnel about the measures to be taken in case of a truck and/or a loaded body catching on fire. The employer must also inform its employees of an appropriate place to drop the load near the maintenance facility (preferably away from traffic, surface drains and ditches).

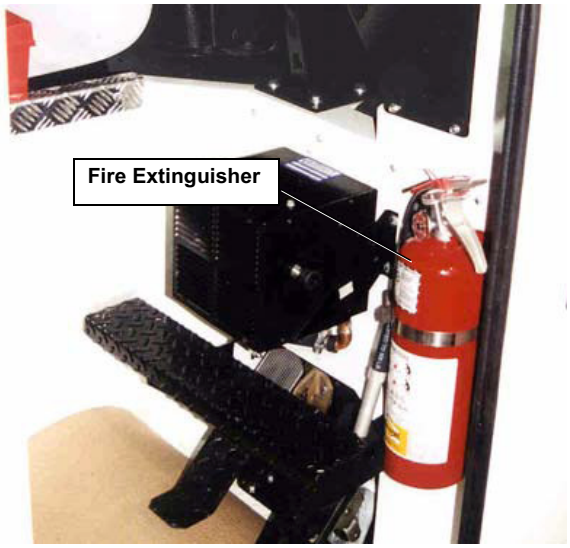


Figure 4. **Fire extinguisher location**

SAFETY PROPS

Safety props are essential safety devices which are to be used every time maintenance has to be performed under a raised body or tailgate. Two types of safety props are installed on every Expert(t) 2000™:

- the body safety prop is designed to hold the body in case a hoist-related failure occurs;
- the tailgate safety prop is designed to hold the tailgate in case a tailgate-cylinder-related failure occurs.

⚠ DANGER

SAFETY PROPS MUST BE SET PRIOR TO PERFORMING ANY MAINTENANCE UNDER A RAISED BODY OR TAILGATE. FAILURE TO DO SO MAY RESULT IN SEVERE INJURY OR EVEN DEATH.

⚠ DANGER

DO NOT USE PROPS WITH A LOADED BODY. NEVER STAND UNDER A RAISED AND LOADED BODY.

Body Safety Prop

To set the body safety prop:

1. Lift the body until the safety prop is clear to be tilted under the body;
2. Pull the handle (see Figure 5. “Safety prop release handle”) to release the safety prop, then pull down the safety prop;

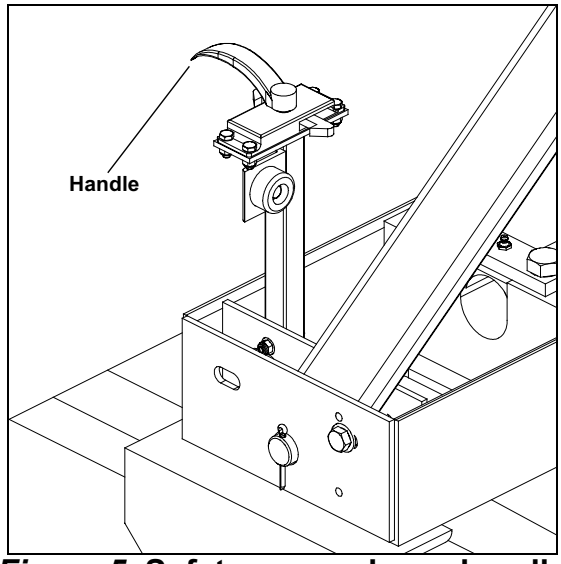


Figure 5. **Safety prop release handle**

3. Slowly lower the body so it rests properly on the prop (see Figure 6. “Body safety prop”);

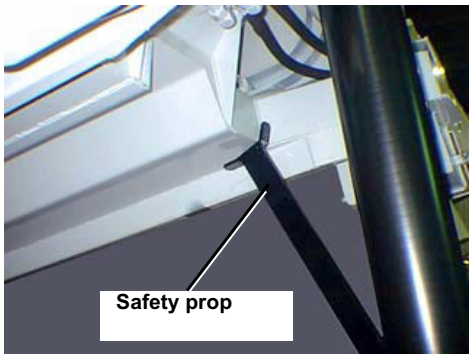


Figure 6. **Body safety prop**

4. Once finished with repairs or inspection, slightly raise the body and bring back the safety prop to its vertical position, then lower the body.

Tailgate safety prop

The tailgate safety prop is used to support and keep the tailgate open during inspection or when maintenance is carried out on the vehicle. It is mandatory to install the safety prop each time the tailgate is opened for such purpose.

For maintenance on comingle split body units equipped with an inside door; refer to the comingle section of the parts and service manual.

The safety prop can be easily installed when the tailgate is slightly open.

⚠ DANGER

ALWAYS USE THE TAILGATE SAFETY PROP WHEN WORKING UNDER A RAISED TAILGATE. THE SAFETY PROP MUST BE INSTALLED EVEN IF THE TAILGATE IS IN THE FULLY RAISED POSITION.

Apply the following procedure to install the safety prop:

1. Make sure there is no garbage inside the body.
2. Remove the tailgate-locking mechanism safety pins.

⚠ DANGER

MAKE SURE THAT NO ONE IS STANDING BEHIND THE TRUCK AND THAT THERE IS NO WASTE MATERIAL IN THE BODY PRIOR TO RAISING THE TAILGATE.

3. Start the engine.
4. Turn the pump switch **ON;**

⚠ DANGER

MAKE SURE NO ONE IS STANDING BEHIND THE TRUCK PRIOR TO RAISING THE TAILGATE.

5. Open the tailgate about 3 feet high;
6. Raise the tailgate 3 feet (enough to raise the safety prop);
7. Pull the safety prop upward (see Figure 7. “Pulling the tailgate safety prop out from its home position”).

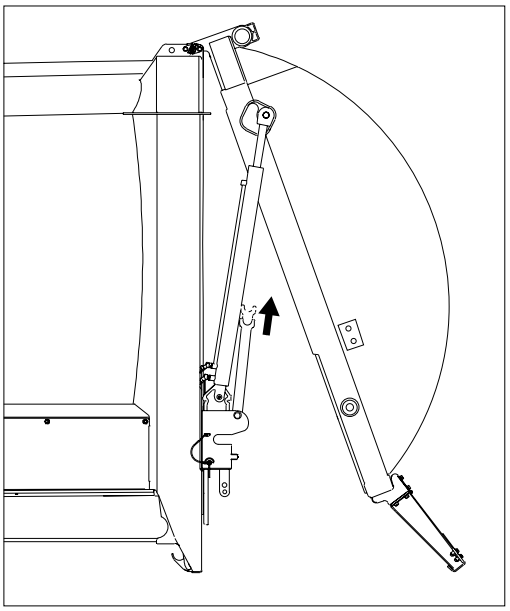


Figure 7. **Pulling the tailgate safety prop out from its home position**

8. Set the safety prop (see Figure 8. “Putting the tailgate safety prop in its set position”).

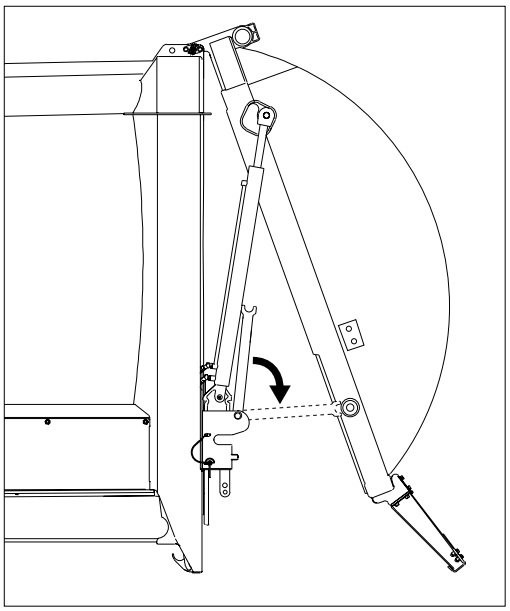


Figure 8. **Putting the tailgate safety prop in its set position**

9. Lower the tailgate onto the safety prop.

Apply the following procedure to close the tailgate when the safety prop is set:

1. Start the engine;
2. Turn the pump switch **ON** and raise the tailgate about 3 feet high;

3. Raise the tailgate safety prop (see Figure 9. “Raising the tailgate safety prop upward”);

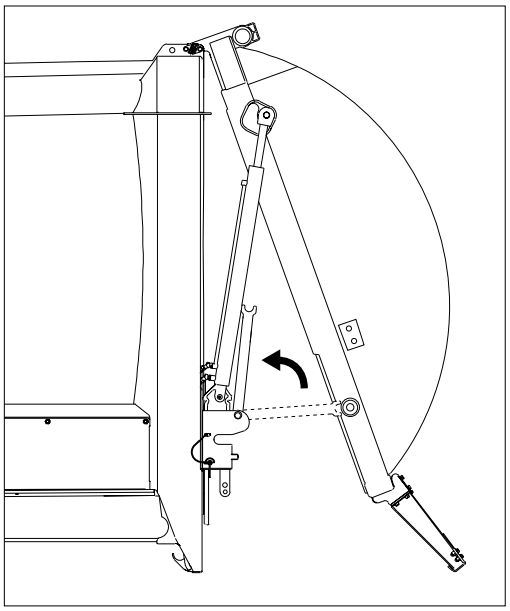


Figure 9. **Raising the tailgate safety prop upward**

4. Release your grip on the safety prop to set in its hom position (see Figure 10. “Putting the tailgate safety prop back in its home position”);

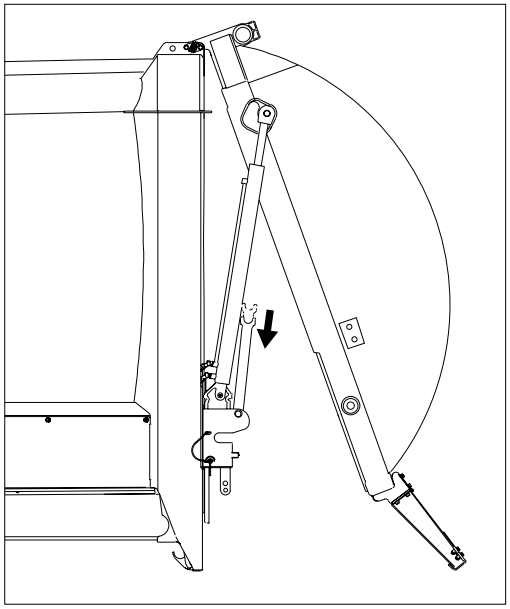


Figure 10. **Putting the tailgate safety prop back in its home position**

5. Lower the tailgate;
6. Using the locking mechanism controls in the cab, lock the tailgate in place;
7. Put the safety pins back in place.

OTHER GENERAL SAFETY PRECAUTIONS

The following is general safety and operational precautions which should be adhered to by operators AND/OR maintenance personnel at all times.

⚠ DANGER

DO NOT OPERATE OR SERVICE THIS VEHICLE BEFORE HAVING READ AND COMPLETELY UNDERSTOOD THIS MANUAL AND THE SAFETY LABELS ON THE VEHICLE. MAINTENANCE PERSONNEL MUST ALSO READ AND UNDERSTAND THE OPERATOR'S MANUAL FOR THIS VEHICLE.

⚠ DANGER

FAILURE TO CONTACT LABRIE TO REPORT A TWO-OPERATOR USE OF THE UNIT MAY RESULT IN UNIT AND/ OR PROPERTY DAMAGES, PERSONAL INJURY OR EVEN DEATH.

⚠ DANGER

NEVER STAND UNDERNEATH A RETRACTED AUTOMATED ARM, SINCE NO ARM CYLINDER IS EQUIPPED WITH A HOLDING VALVE. SHOULD A HYDRAULIC COMPONENT BREAK, SUCH AS AN HYDRAULIC HOSE, FAILURE TO STAY AWAY FROM THE ARM MAY RESULT IN PERSONAL INJURY OR EVEN DEATH.

- The operator of the Helping Hand™ lifting arm shall make sure that any people or obstructions are far away from the automated arm before moving it. Failure to do so may result in unit and / or property damages, personal injury or even death;
- At the beginning of every working day, inspect the body, the packing system and any system that might endanger the safety of the public and/or the operator;
- Verify that the mirrors, brakes, accelerator pedal, steering wheel and turn signals are in good working order;

- Do not operate this equipment if there are any signs of damage or incomplete repairs;
- Report any doubts and any equipment safety service requirements to your supervisor;
- Maximum speed while right-hand-side driving, if permitted, is 20 Mph (or 32 km/h);
- Keep both hands on the steering wheel at all times for better control;
- Do not leave the driving position until the vehicle is completely stopped and the parking brake applied;
- When the vehicle is parked, the parking brake must be applied;
- For any work, cleaning or inspecting being performed between the body and the chassis, the body safety prop must be used. The vehicle must also be on level ground.

⚠ DANGER

WATCH AND BE ABSOLUTELY SURE THAT THERE ARE NO PEOPLE AT THE REAR OF THE VEHICLE WHEN OPENING AND/OR CLOSING THE TAILGATE(S), OR WHEN RAISING AND/OR LOWERING THE BODY.

⚠ DANGER

DO NOT GET INTO THE HOPPER COMPARTMENT OR TRY TO REPAIR ANYTHING BEHIND THE PACKER WHEN IT IS WORKING OR WHEN THE HYDRAULIC PUMP IS STILL RUNNING. PERSONNEL AUTHORIZED TO GET INTO THE HOPPER MUST FIRST COMPLETE THE LOCKOUT/TAGOUT PROCEDURES REQUIRED BY THE EMPLOYER.

CONTROLS

The Expert(t) 2000™ uses a series of controls systems located either in the cab or around the body for easier access and operation of the different functions installed on the vehicle. This section of the *Maintenance Manual* presents you a description of such controls systems.

HELPING HAND™ JOYSTICK

The joystick is used to control the Helping Hand™ arm of the Expert(t) 2000™. It can be located either at the center of the cab or to the right or left of the stand-up position steering wheel. The joystick frame, depending on which side you drive, is usually inserted into brackets on either side to offer you a comfortable reach.

The controls on the joystick are the handle, the buttons on the top and front, and the deadman switch.

- The handle is used to control the horizontal and vertical movements of the arm components.
- The buttons on the top are used to control the opening and closing movement of the gripper; the one on the right to open and the one on the left to close it.
- The buttons on the front are used to control the Auto-dump feature (optional).

Note: The Auto-dump feature is optional therefore, only those vehicles with the feature installed will have the front buttons functional.

- The deadman switch is used as a safety device to ensure every movement of the arm from the joystick is absolutely wanted and controlled by the operator. That is, if the operator is not pressing the deadman switch while trying to move the arm with the joystick, no movement will occur. With such safety feature, whatever accidental movement inflicted on the joystick will not be transmitted to the arm as a command signal.

Note: Whenever the arm is out of its home position, two red warning lights flash on the dashboard to remind you that you shouldn't move the vehicle under such circumstances.

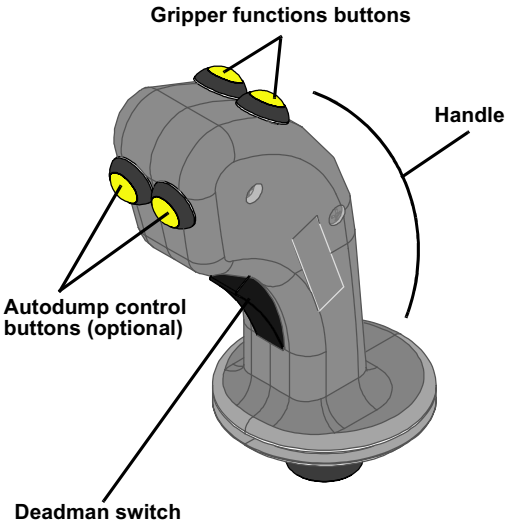


Figure 11. **Helping Hand™ joystick**

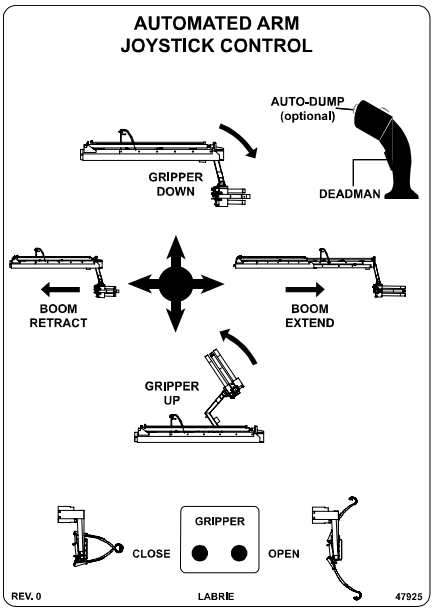


Figure 12. **Helping Hand™ joystick functions**

Pump Switch

The pump switch engages the Expert(t) 2000™ hydraulic system and enables all body control and functions. This switch is also called “PTO switch”. When it is turned **ON**, a red pilot light on the dashboard is turned on to indicate that the hydraulic system is engaged.

Note: ***The pump switch can only be turned on when the engine RPM is lower than 900 and the air pressure is higher than 70 PSI. It is recommended to raise the engine RPM only after the hydraulic system is engaged.***

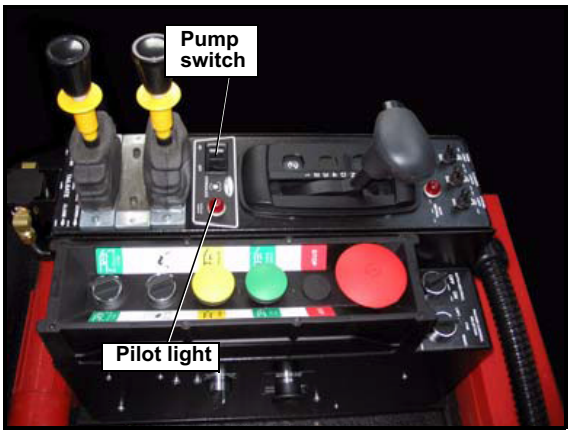


Figure 13. **Pump switch and pilot light on the console**

⚠ CAUTION

TO TURN THE PUMP SWITCH TO EITHER ON OR OFF, ALWAYS MAKE SURE THE MAIN VALVE ON THE HYDRAULIC TANK IS OPEN. THE PUMP IS ALWAYS TURNING ALONG WITH THE ENGINE, THEREFORE, IT WILL BE SERIOUSLY DAMAGED OR EVEN DESTROYED IF THERE IS NO OIL FEED INTO IT.

Figure 14. **Main valve on the hydraulic tank**

⚠ CAUTION

WHEN A MAJOR LEAK IN THE HYDRAULIC SYSTEM OCCURS, TURN OFF THE ENGINE AND CLOSE THE MAIN VALVE ON THE HYDRAULIC TANK.

IF THE VEHICLE HAS TO BE TAKEN SOMEWHERE ELSE, CALL FOR TOWING AND DO NOT RESTART THE ENGINE.

REPORT MAINTENANCE STAFF ABOUT THE PROBLEM.

CONTROL CONSOLE

The Expert(t) 2000™ control console houses most of the controls of the Expert(t) 2000™ functions and systems. It is located in the center of the cab for easy access from both driving positions. Outside the console, you find its interface with all buttons and switches and on the inside, you find the corresponding electrical wiring and devices.

Figure 15. **Control console**

Red Emergency-Stop Button

The red emergency **STOP** button switches on and off all the hydraulic functions on the body. It is conceived and designed to instantly stop all body functions in the case of an emergency of any kind.

- *Pressing this button* stops all body functions right where they're at.
- *Pulling the button* will enable the hydraulic pump back. To resume any function from where it has stopped, apply the appropriate procedure for this action.

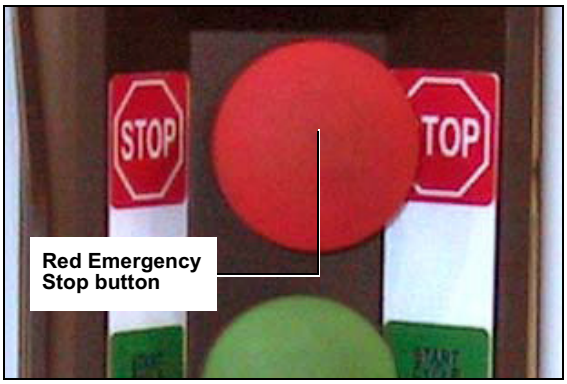


Figure 16. **Emergency stop button**

Green Start Cycle Button

The green **START CYCLE** button activates the packer for a full cycle. A full packing cycle lasts approximately 15 seconds with the engine running at 1200 RPM.

Note: ***When the multi-cycle feature is in use, the green button activates the packer for the number of cycles defined on the multi-cycle module. For more information, see "Changing Packer Multi-cycle Settings" on page 46.***

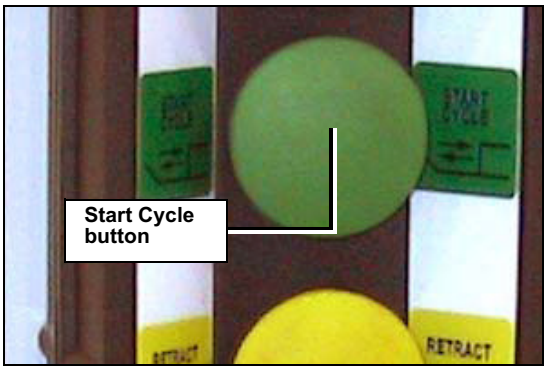


Figure 17. **Start Cycle button**

Yellow Retract Button

The yellow **RETRACT** button activates the packer for a retract stroke to bring it back to the home position. Such control is very useful when the body is full and the load in the body does not allow the packer to reach the end of its extend stroke.

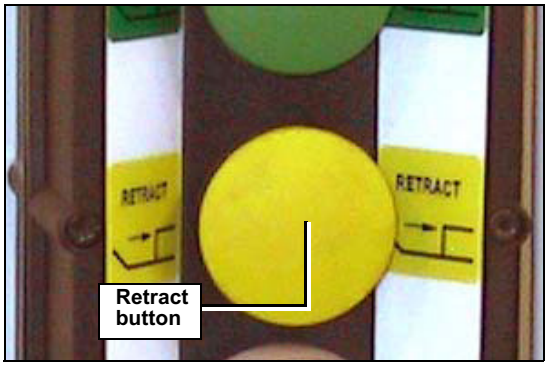


Figure 18. **Retract button**

Multi-cycle Control Switch

The **MULTI-CYCLE** control switch allows you to choose whether you want to activate the packer for several predefined cycles or for its default only one cycle. Turning on the switch allows packer multi-cycling when you press the green packer start cycle button. See “Green Start Cycle Button” on page 21. Turning it off during the multi-cycling operation will have the packer finish the cycle it is on and not starting a new one. When the switch is turned **OFF**, the packer will perform only one cycle when you press the green button.

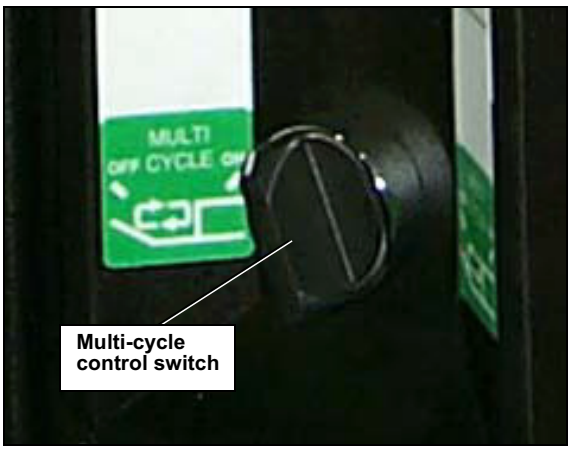


Figure 19. **Multi-cycle control switch**

Engine RPM Control

The Expert(t) 2000™ is equipped with an engine RPM control system which consists of the increment or decrement of a predetermined value of the engine RPM (revolutions per minute) depending on the results you want to achieve.

For example:

- *if you want to achieve faster operation of moving parts* such as the hoist and the packer, increase the engine RPM.
- *if you want to reduce the level of noise while operating the Expert(t) 2000™*, decrease the engine RPM. Increasing or decreasing the engine RPM directly affects fuel consumption therefore, it is an issue to look at when using the system.

The engine RPM controls that exist in the Expert(t) 2000™ are the **SPEED-UP** switch, the **SPEED-UP INHIBITOR** control, and the packer automatic speed-up. These controls are individually presented throughout this guide.

Note: The throttle pedal is an element that can directly affect the engine RPM; however, it must not be used to control any moving parts of the body

but rather be used for regular driving purposes as with any other vehicle.

Note: Increasing the engine RPM direct and proportionally affects fuel consumption.

Speed-up Switch

The **SPEED-UP** switch allows the operator to manually increase the engine RPM while operating the body moving parts. That is, turning the switch to **ON** will rev-up the engine to a predetermined value (usually 900, 1200 or 1500 RPM).

This feature is effective under the following conditions:

- Control station properly selected.
- Transmission is in neutral.
- Speed-up inhibitor control set to “Disable”.

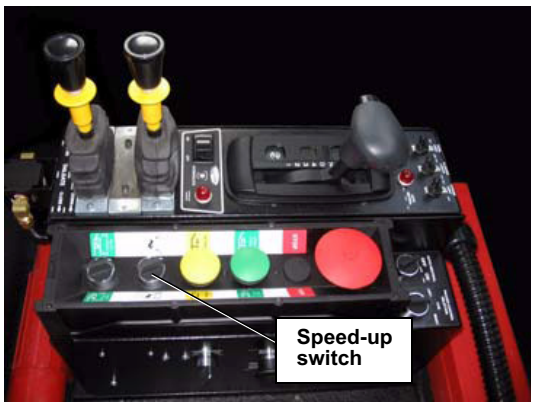


Figure 20. **Speed-up switch**

Speed-up Inhibitor Control

The **SPEED-UP INHIBITOR** control allows you to override any RPM speed-up control existing on the Expert(t) 2000™; in particular, the packer automatic **SPEED-UP** feature. Independently, from what control station is controlling the functions of the body moving parts, the **SPEED-UP INHIBITOR** control, when enabled, brings the engine RPM to its idle value. In other words, when enabled, this feature disables all other speed-up functions.

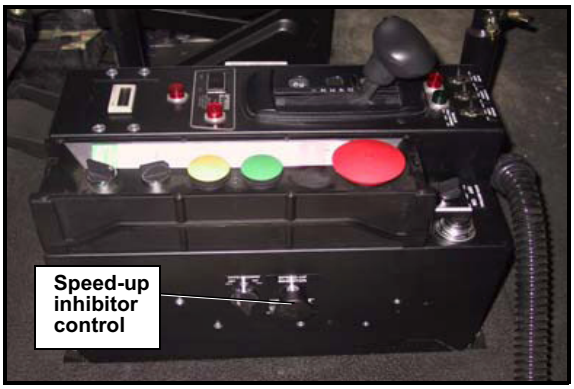


Figure 21. **Speed-up inhibitor control**

***Note:** Decreasing the engine RPM direct and proportionally affects fuel consumption.*

Control Station Selector Switch

This switch allows you to choose the control station that you want to use. Only one control station is enabled at a time. You can either use the control station located on the console or the one outside by the hopper.

Figure 22. **Control station selector switch**

TEMPORARY HANDBRAKE

The temporary handbrake option (available only on Labrie extended cabs) sets the temporary brake on and off and shifts the transmission into either **NEUTRAL** or **DRIVE** by switching on and off the **Auto-Neutral** system. It is mainly used for stops of short duration where you work no farther than ten feet from the Expert(t) 2000™, such as the regular and repetitive stops you do when door-to-door refuse collecting. This brake is in the form of a toggle switch located near the right-hand side door and must be applied only when you have used the brake pedal to bring the vehicle to a full stop. For longer stops, use the parking brake.

Figure 23. **Temporary handbrake**

⚠ CAUTION

NEVER LEAVE THE VEHICLE BEFORE IT HAS COME TO A FULL STOP AND EITHER THE TEMPORARY HANDBRAKE AND/OR THE PARKING BRAKE HAS BEEN APPLIED. IF THE VEHICLE IS ON A SLOPE OR IF YOU ARE ABOUT TO GO FARTHER THAN TEN (10) FEET AWAY FROM IT, LABRIE ENVIRONMENTAL GROUP RECOMMENDS ENGAGING BOTH BRAKE SYSTEMS FOR ADDITIONAL SAFETY.

IMPORTANT

WHEN YOU RETURN IN THE CAB TO DRIVE AWAY FROM A COLLECTION STOP, ONLY SLIGHT PRESSURE ON THE BRAKE PEDAL AND SHIFTING OF THE TEMPORARY HANDBRAKE AND/OR THE PARKING BRAKE ARE NECESSARY TO ENGAGE THE TRANSMISSION AND MOVE THE VEHICLE. THIS CAREFUL SEQUENCE HELPS YOUR EXPERT(T) 2000™ BRAKE SYSTEMS LAST LONGER AND PERFORM AT HIGHER LEVELS.

BODY CONTROL STATION

The body control station, located outside the cab by the body, allows you to use and control most of the hydraulic functions of the body.

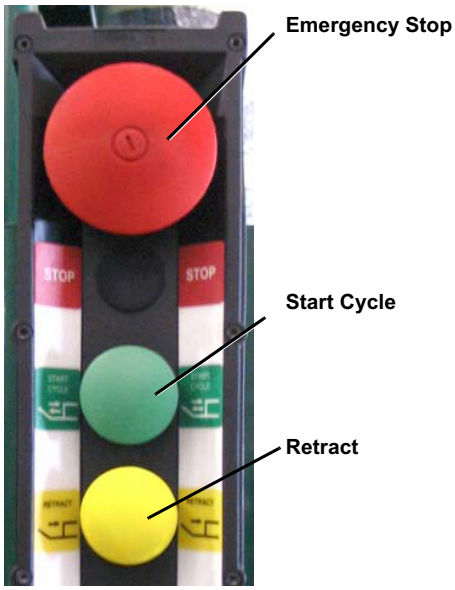


Figure 24. **Body control station**

STROBE LIGHT SWITCH

The **STROBE LIGHT** switch is located on the control console of the Expert(t) 2000™. It is used to turn on and off the strobe lights that are installed on the Expert(t) 2000™. You must turn on the **STROBE LIGHT** switch at the beginning of a work day. See *Starting the Vehicle*.

Figure 25. **Strobe light switch**

MAINTENANCE

In spite of our efforts to build a vehicle that is as safe as possible, the operator's safety certainly depends on the precautionary measures taken while operating or servicing the vehicle.

Note: ***If in doubt, ask your supervisor or contact the Labrie Customer Support Center for any technical support you may require.***

Establish and apply a periodic inspection program to keep moving parts in good working order, properly adjusted and safe. It is recommended that a brief inspection be done by the operator every day and any detected malfunctions must be reported for correction before using the equipment.

Once a month, inspect the chassis and the body for breaks, cracks or any potential problems. Any defects found must be repaired without delay. To ensure the good working order of the equipment, particular attention should be paid to structural components in order to prevent deterioration due to corrosion; touchups and/or complete paint jobs should be done when necessary.

PRIOR TO START UP

Before starting the vehicle, ensure that no system will engage and start to operate as you are starting the engine. All electrical components should be turned **OFF** and the hydraulic pump disengaged (see Figure 26. “Hydraulic pump switch”).

Figure 26. **Hydraulic pump switch**

The main valve on the hydraulic tank must be open (see Figure 27. “Main hydraulic tank (pressurized model)” and Figure 29. “Suction-line-mounted valve”).

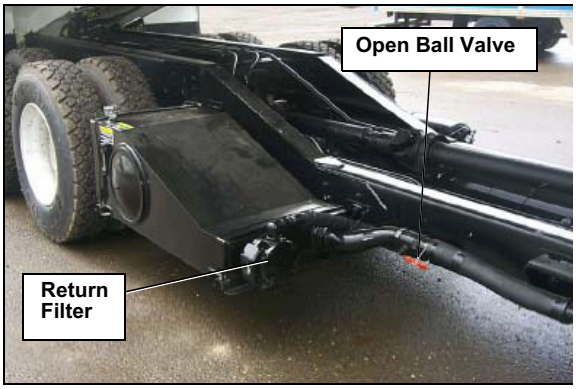


Figure 27. **Main hydraulic tank (pressurized model)**

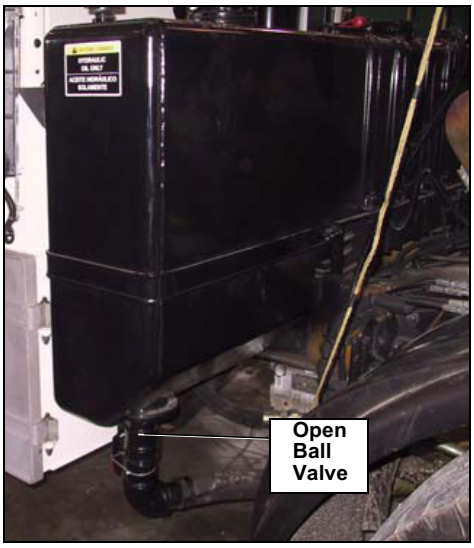


Figure 28. **Main hydraulic tank ("saddle" model)**

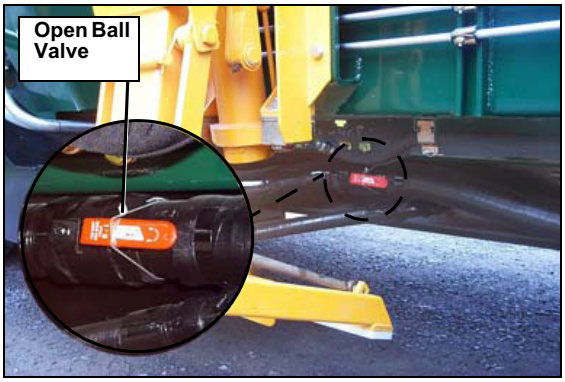


Figure 29. **Suction-line-mounted valve**

⚠WARNING

MAKE SURE THE BALL VALVE ON THE HYDRAULIC TANK IS FULLY OPEN BEFORE STARTING THE ENGINE (SEE FIGURE 27. "MAIN HYDRAULIC TANK (PRESSURIZED MODEL)", FIGURE 28. "MAIN HYDRAULIC TANK ("SADDLE" MODEL)" AND FIGURE 29. "SUCTION-LINE-MOUNTED VALVE"). IF NOT OPEN, IMMEDIATE DAMAGE WILL OCCUR TO THE PUMP, EVEN THOUGH THE PTO SWITCH IS TURNED OFF.

Once the engine is started, wait for the air pressure to build up to at least 70 PSI.

⚠CAUTION

DO NOT OPERATE NOR MOVE THE VEHICLE UNTIL THE AIR PRESSURE HAS REACHED 70 PSI.

SHUTDOWN PROCEDURE

If the vehicle has to be stored for an extended period; follow the chassis manufacturer shutdown requirements as well as the maintenance requirements and perform the following procedure.

1. Park on a hard, level surface;
2. Apply the parking brake;
3. Make sure all moving parts are in stored position (tailgate, body, crusher panel, packer, etc.);
4. Turn hydraulics, electrical and engine off;
5. Turn the master switch to the **OFF** position;
6. Drain all air tanks. (See “Air Tank Draining Procedure” on page 30.)

Air Tank Draining Procedure

Labrie™ strongly recommends draining the Expert(t) 2000™ air tanks at the end of each working day and prior to any maintenance.

⚠CAUTION

THE OPERATOR **MUST** WEAR SAFETY GLASSES TO PROTECT HIS EYES AGAINST DUST AND SUSPENDED MATTERS. THE OPERATOR MUST ALSO STAY AWAY FROM THE STREAM TO AVOID POTENTIAL INJURIES.

To drain the air tanks, apply the following procedure:

1. Find the valve(s).

Note: Some trucks are equipped with more than one drain valve.

2. Before opening the valve, be sure to stay away from the stream. Open the valve and leave it open until no more water is going out.

- *If the truck is equipped with the following type of tank*, turn the valve one-quarter turn.

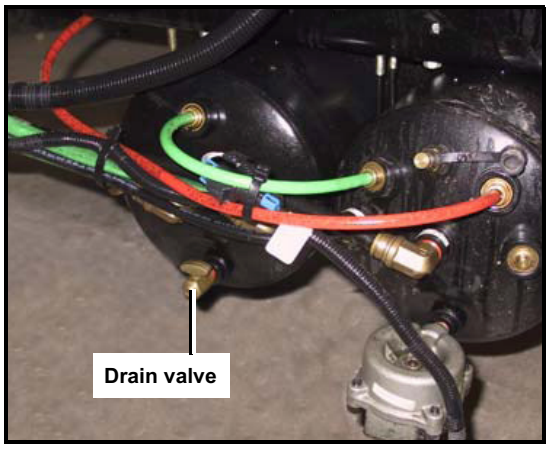


Figure 30. **Air tank**

- *If the drain valve is equipped with a steel cable* (see Figure 31. “Air tank with steel cable on drain valve”), the operator has to pull the cable in order to open the valve.

Figure 31. **Air tank with steel cable on drain valve**

- *When the air tanks are not easily reachable*, extension hoses join them to ball valves in order to perform draining remotely (optional).

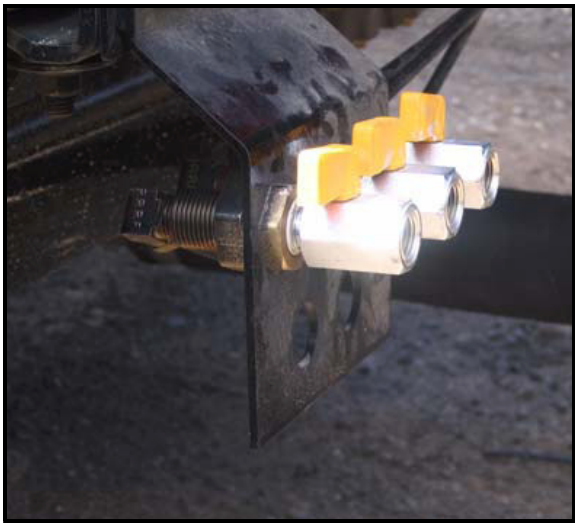


Figure 32. **Ball valves with extension hoses**

- In this case, the operator has to open the valves (quarter turn) to proceed with the draining.

3. Close the valve and repeat the procedure for all the other valves (if there's more than one installed on the truck).

GENERAL CLEANLINESS

Cleanliness is part of the safety.

- Ensure the equipment to work properly by removing any stacked garbage in the hopper area.
- Clean all truck lights, warning lights and safety stickers, so the operator and the surrounding pedestrians and vehicles will be safe around the truck at all times.
- Keep clean the contact surface between the body and chassis. Labrie™ recommends to clean the chassis after every unloading.
- Make sure that the side step and/or the hopper step (if installed) are clean and free of any slippery material.

⚠ WARNING

KEEP THE RIGHT- AND LEFT-HAND SIDE CAB FLOOR DRY AND CLEAN TO PREVENT ANY RISK OF SLIPPING AND ACCIDENT.

⚠ DANGER

USE A STEPLADDER TO WORK ON THE HIGHER PARTS OF THE VEHICLE. REMEMBER THE ROOF IS NOT MEANT TO BE WALKED ON. BE VERY CAUTIOUS IF YOU HAVE TO WORK ON THE ROOF AREA.

⚠ DANGER

ALWAYS USE SAFETY HARNESS WHEN WORKING OR WALKING ON THE ROOF OF THE VEHICLE.

Cleaning the Hopper Area

The area behind the packer should be cleaned out every day. The packer will not work properly if waste accumulates in this area; it could even cause severe damage to the packer and other related parts.

This section indicates the cleaning procedure of the hopper section.

Note: The procedure may vary depending on what type of

chassis and options are installed on the vehicle (i.e. crusher panel, comingled body, glass compartment, automated arm type, etc.)

⚠ DANGER

ALWAYS WEAR GLOVES, SAFETY BOOTS, SHIRT, FULL-LENGTH PANTS AND SAFETY GLASSES WHEN CLEANING THE HOPPER AND BODY.

On Helping Hand™-equipped Units

To clean the hopper on a Helping Hand™-equipped Expert(t) 2000™, apply the following procedure:

1. Park the Expert(t) 2000™ on level ground, in an area where small debris can fall on the ground for further collection.
2. Apply the parking brake.
3. Using the **PACKER CONTROL SELECTOR** switch on the console, select the right-hand side packer control station (see Figure 33. “Packer control selector switch”).

Note: This switch is found only on vehicles equipped with multiple packer control stations.

Figure 33. **Packer control selector switch**

4. Disable the speed-up system on the console (see Figure 34. “Main console from right-hand side driving position”) by pulling out the **SPEED-UP INHIBITOR** switch;

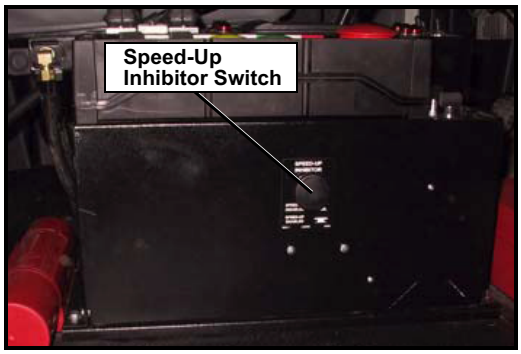


Figure 34. **Main console from right-hand side driving position**

5. Raise the crusher panel (see Figure 35. “Hopper”) using the lever located on the main hydraulic valve (see Figure 36. “Crusher panel lever”);

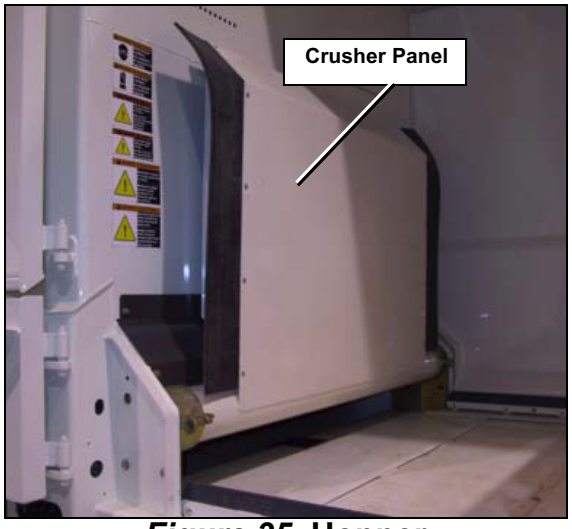


Figure 35. **Hopper**

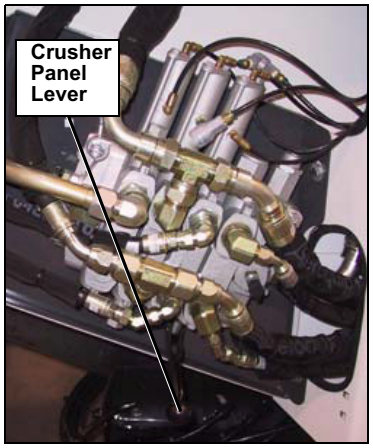


Figure 36. **Crusher panel lever**

6. Using the joystick, fully extend the Helping Hand™ arm.

7. Push the green **START CYCLE** button to fully extend the packer, then push the red emergency **STOP** button when the packer is fully extended.

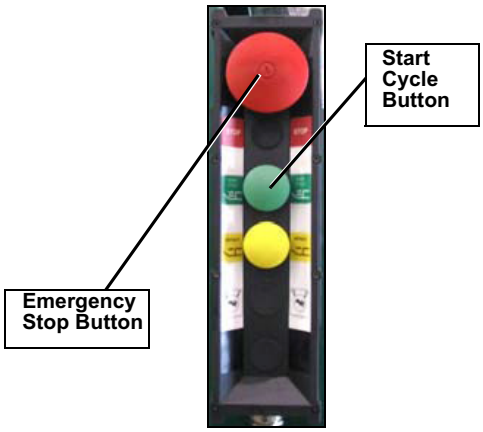


Figure 37. **Right-hand side control station**

Figure 38. **Extended packer**

8. Apply the Lockout/Tagout procedure. Refer to “Lockout/ Tagout Procedure” on page 8.

DANGER

APPLY THE LOCKOUT/TAGOUT PROCEDURE TO PREVENT ANY ENGINE START-UP.

9. Open the clean-out trap door on both sides of the hopper;

Figure 39. **Clean-out trap door**

10. Clean all accumulated dirt under the cylinders and in the side tracks using a hoe and a water jet if necessary.

CAUTION

DO NOT USE THE WATER JET DIRECTLY ON CONNECTORS OR BATTERY FUSES.

11. Clean out the rest of the Expert(t) 2000™ body.

Note: Perform a visual inspection of the hopper area, checking for possible leaks in the hydraulic system and wear on the mechanical parts.

12. Exit the hopper;
13. Using the hoe, rake small pieces of garbage out of the clean-out trap;
14. Clean the area with a water jet;
15. Close the clean-out trap doors;
16. Start the engine;
17. Engage the hydraulic system;
18. Fully retract the packer;
19. Retract the arm along the hopper.

On Manual-collection and Cart-tipper-equipped Units

To clean the hopper on an Expert(t) 2000™ not equipped with a Helping Hand™, apply the following procedure:

1. Park the Expert(t) 2000™ on level ground, in an area where small

debris can fall on the ground for further collection.

2. Apply the parking brake.

3. Using the **PACKER CONTROL SELECTOR** switch on the console, select the right-hand side packer control station (see Figure 33. “Packer control selector switch”).

Note: This switch is found only on vehicles equipped with multiple packer control stations.

Figure 40. **Packer control selector switch**

4. Disable the speed-up system on the console (see Figure 41. “Main console from right-hand side driving position”) by pulling out the **SPEED-UP INHIBITOR** switch;

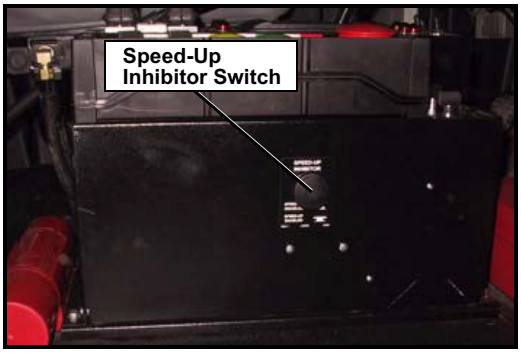


Figure 41. **Main console from right-hand side driving position**

5. Raise the crusher panel (see Figure 42. “Hopper”) using the lever located on the main hydraulic valve (see Figure 43. “Crusher panel lever”);

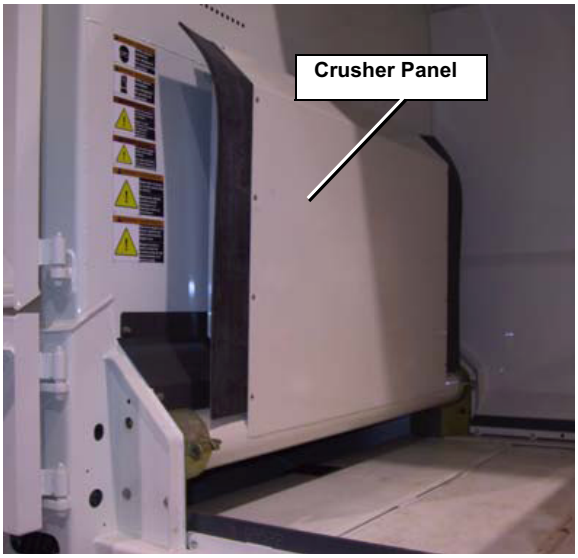


Figure 42. **Hopper**

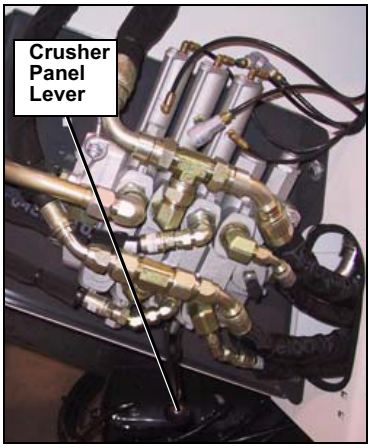


Figure 43. **Crusher panel lever**

6. Push the green **START CYCLE** button to fully extend the packer, then push the red emergency **STOP** button when the packer is fully extended.

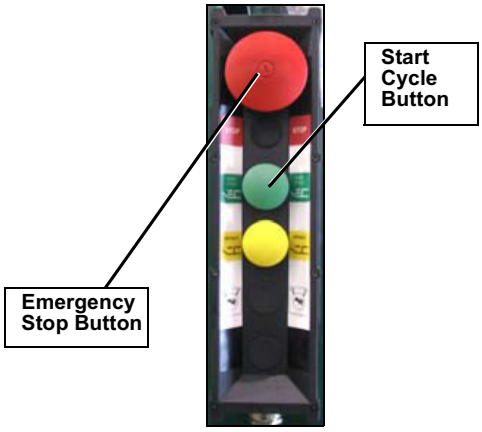


Figure 44. **Right-hand side control station**

Figure 45. **Extended packer**

7. Apply the lockout/tagout procedure. Refer to “Lockout/ Tagout Procedure” on page 8.

⚠ DANGER

APPLY THE LOCKOUT/TAGOUT PROCEDURE TO PREVENT ANY ENGINE START-UP.

8. Open both hopper doors;
9. Slowly open the **clean-out** trap door on both sides of the hopper.

⚠ CAUTION

THE CLEAN-OUT TRAPS MAY BE FILLED WITH CERTAIN AMOUNTS OF LIQUID, MAINLY WATER WHICH SOAKED GARBAGE DURING THE WORK DAY. BE CAREFUL NOT TO SPILL THESE LIQUIDS ON BARE SKIN AND/OR IN EYES.

Note: ***Keep the clean-out traps open during the cleaning.***

Figure 46. **Clean-out trap door**

10. Clean all accumulated dirt under the cylinders and in the side tracks using a hoe and a water jet if necessary.

⚠CAUTION

DO NOT USE THE WATER JET DIRECTLY ON CONNECTORS OR BATTERY FUSES.

11. Clean out the rest of the Expert(t) 2000™ body.

Note: ***Perform a visual inspection of the hopper area, checking for possible leaks in the hydraulic system and wear on the mechanical parts.***

12. Rake with the hoe small pieces of garbage out of the clean-out trap.
13. Clean the area with a water jet.
14. Close the clean-out trap doors.
15. Retract the arm along the hopper.

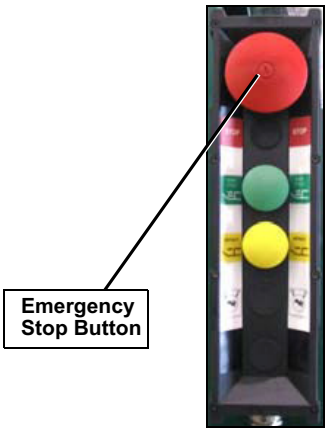


Figure 47. **Right side control station**

16. Open the clean-out trap door on each side of the hopper (see Figure 48. “Hopper clean-out trap door”);

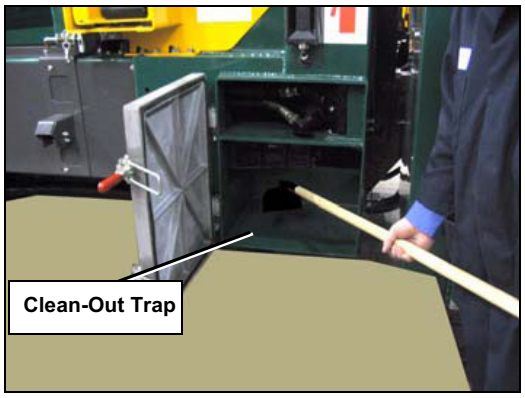


Figure 48. **Hopper clean-out trap door**

17. Climb inside the hopper using a small step-ladder;
18. Bring the swivel-style panel to a vertical position and hold it, using the handle at the upper left corner of the panel (see Figure 49. “Swivel-style panel safety devices”);

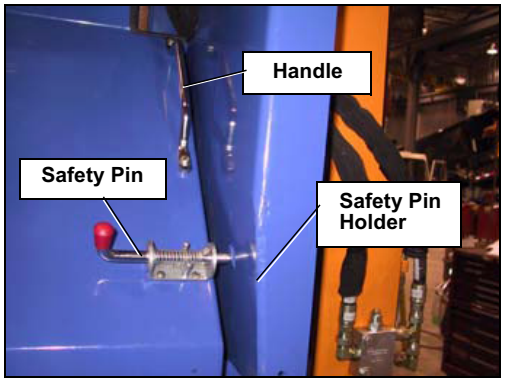


Figure 49. **Swivel-style panel safety devices**

19. Remove the safety pin from its holder and put the pin in the hole at the bottom left of the swivel-style panel (see Figure 49. “Swivel-style panel in vertical position (left-side view)”). This pin is a mandatory safety device, preventing from being caught at the pinch point, when manipulating the swivel-style panel;
20. Lower the swivel-style panel over the packer (see Figure 50. “Tilted swivel-style panel”);

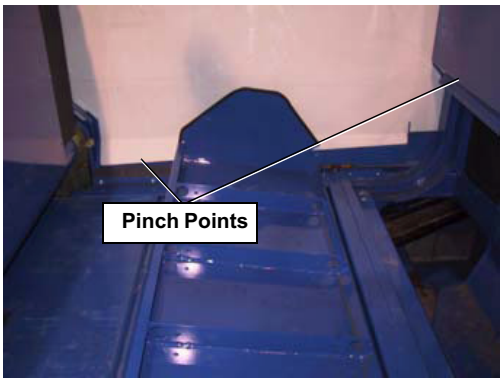


Figure 50. **Tilted swivel-style panel**

21. Remove all accumulated dirt under the cylinder brackets and side rails (see Figure 51. “Cylinder bracket and side rails (left-side view)”) using a scraper or pressurized water;

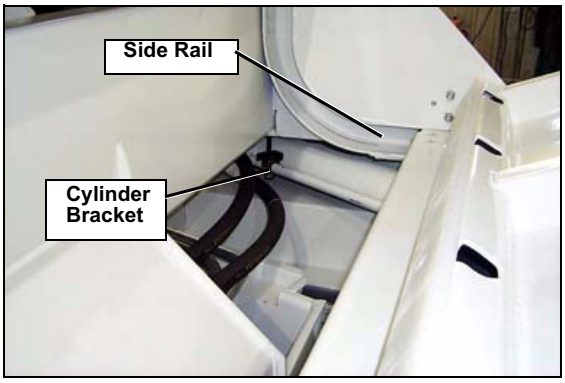


Figure 51. **Cylinder bracket and side rails (left-side view)**

22. Rake small pieces of garbage towards the clean-out traps (see Figure 52. “Clean-out trap when the swivel-style panel is lowered”);

Figure 52. **Clean-out trap when the swivel-style panel is lowered**

23. Finish cleaning the area with pressurized water;

24. Perform a visual inspection of the hopper area, checking for for proper working order and/or alignment, possible leaks in the hydraulic system and wear on the mechanical parts, such as:

    - Rollers;
    - Cylinders pins;
    - Hoses, pipes and connections;
    - Proper tightness of bolts;
    - Check for excessive wear of the floor and sidewalls of the hopper;
    - Check cylinders and hoses for leaks**;**

25. After cleaning and inspecting, raise the swivel-style panel until the safety pin is leaning against the side frame (see Figure 53. “Swivel-style panel safety devices”);

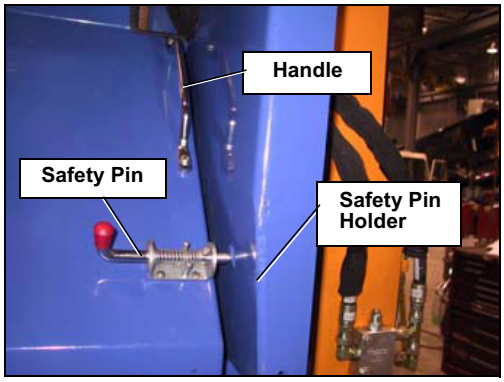


Figure 53. **Swivel-style panel safety devices**

26. Hold the swivel-style panel to a vertical position using the handle and remove the safety pin;
27. Push the swivel-style panel towards the front of the vehicle, and secure the panel using the lock handle;
28. Exit the hopper;
29. Using the hoe, rake small pieces of garbage out of the clean-out trap;
30. Clean the area with a water jet;
31. Close the clean-out trap doors;
32. Start the engine;
33. Engage the hydraulic system;
34. Fully retract the packer;
35. Retract the cart tipper (if applicable) along the hopper.

PACKER MAINTENANCE

The Expert(t) 2000™ packing system has a heavyduty guiding system using high-strength steel wear plates. Because of the intensive use of the packer (1000 to 3000 cycles per day), Labrie™ recommends both:

- a mandatory visual inspection of the packer and its components, performed daily by the operator;
- a mandatory inspection and maintenance, carried out weekly by maintenance personnel.

Greasing all moving parts on a daily basis is very important, and the proper adjustment of the limit switches is imperative, especially on units equipped with multi-cycle options. Refer to “Lubrication” on page 123 for detailed diagrams of greasing points and lubrication schedule.

⚠ CAUTION

DO NOT GREASE THE SIDE RAILS: ABRASIVE MATERIAL STICKS TO THE GREASE AND CAN CAUSE PREMATURE WEAR OF THE ROLLERS AND/OR THE SIDE RAILS.

Any problem found on the packing system must be corrected immediately. The Labrie Customer Support Center is available for any type of technical support.

⚠ DANGER

APPLY THE LOCKOUT/TAGOUT PROCEDURE AT ALL TIMES WHEN MAINTENANCE OR INSPECTION IS CARRIED OUT ON THE VEHICLE.

To prevent breakdowns and to reduce maintenance expenses, apply the following procedure:

1. Park the Expert(t) 2000™ on level ground, in an area where small debris can fall on the ground for further collection.
2. Apply the parking brake.
3. Using the **PACKER CONTROL SELECTOR** switch on the console, select the right-hand side packer control station (see Figure 54. “Packer control selector switch”).

Note: This switch is found only on vehicles equipped with multiple packer control stations.

Figure 54. **Packer control selector switch**

4. Disable the speed-up system on the console (see Figure 55. “Main console from right-hand side driving position”) by pulling out the **SPEED-UP INHIBITOR** switch;

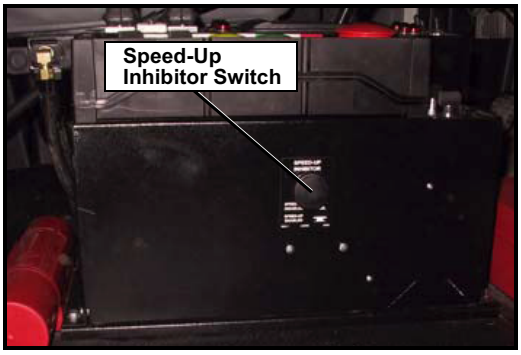


Figure 55. **Main console from right-hand side driving position**

5. Raise the crusher panel (see Figure 56. “Hopper”) using the lever located on the main hydraulic valve (see Figure 57. “Crusher panel lever”);

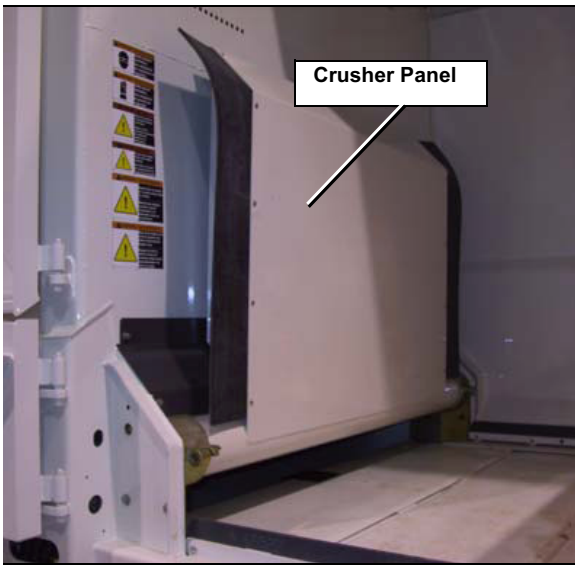


Figure 56. **Hopper**

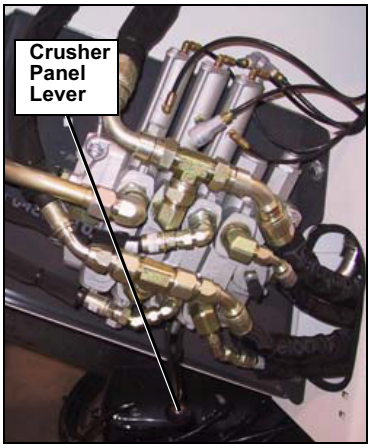


Figure 57. **Crusher panel lever**

6. Push the green **START CYCLE** button to fully extend the packer,

then push the red emergency **STOP** button when the packer is fully extended.

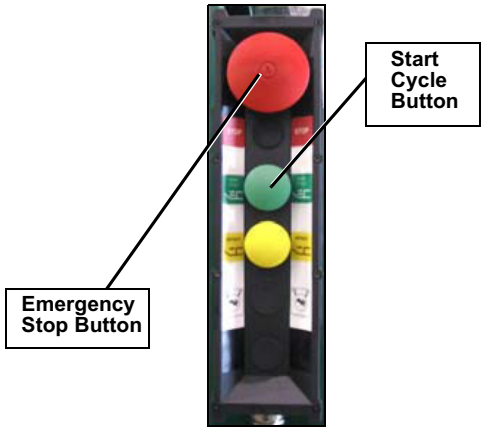


Figure 58. **Right-hand side control station**

Figure 59. **Extended packer**

7. Apply the **Lockout/Tagout** procedure. Refer to “Lockout/ Tagout Procedure” on page 8.

DANGER

APPLY THE LOCKOUT/TAGOUT PROCEDURE TO PREVENT ANY ENGINE START-UP.

8. Check the follower panel hinges and make sure there is no wear on the panel surface;
9. Unbolt and remove the wear pad bracket (Part #69584);
10. Inspect the nylon wear pad (see Figure 61. “Extended packer”).

Note: This wear pad wipes out dirt each time the packer goes back and forth. If this wear pad is less than 1-inch thick, replace it with a new one.

11. Visually inspect both hopper side rails and packer rollers (Figure 60. “Packer roller”) for premature wear. See also “Packer Roller Replacement” on page 70 and “Wear Pads Replacement” on page 57 for more details;

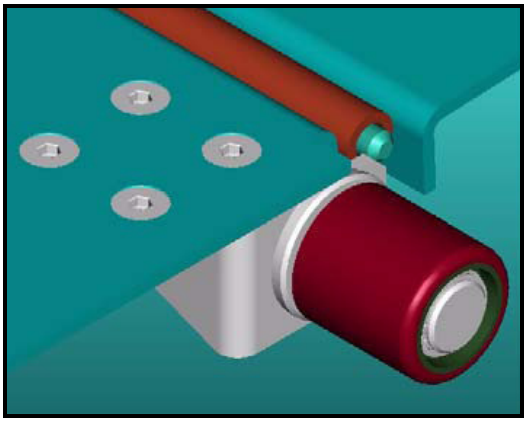


Figure 60. **Packer roller**

12. Make sure there are no leaks on hydraulic hoses and pipes. Tighten leaking connections and/or replace the defective hose;
13. Cylinder rod ends must be clear of any dirt;
14. Verify cylinder rods for scratches that may cause the cylinder to leak oil. In this case, the cylinder and/or the seal must be replaced immediately.

Note: Do not attempt to change cylinder seals and packing during the warranty period.

15. Check for vertical and horizontal movement of the packer. If the packer seems to play sideways or even up and down, the packer wear pads need to be replaced. Extensive wear of the hopper floor also suggests that the sliding shoes require immediate replacement. Refer to “Sliding Shoes and Wear Pads” on page 53, “Sliding Shoes Replacement” on page 54 and “Wear Pads Replacement” on page 57;
16. Check if there is no knocking noise when the packer reaches the end of cylinder’s stroke. A knocking noise will indicate that both limit switches require adjustment. Refer to “Limit Switches Adjustment” on page 48 for details.
17. To check if hydraulic cylinders are internally leaking (insufficient packing force), refer to troubleshooting; section 3.19 “Internal Leak Detection”.

Changing Packer Multi-cycle Settings

The packer multi-cycle module is programmed at the factory to execute three cycles when the Multi-cycle switch on the console has been turned on and the packer is activated. However, if these settings do not suit your needs, you can manually change them for those you desire.

Note: ***The packer multi-cycle function lets you program up to 8 cycles at a time.***

To change the packer multi-cycle settings:

1. Turn on the engine and the hydraulic system (**PUMP** switch);
2. Apply the parking brake;
3. On the console, turn the **MULTI-CYCLE** switch on;
4. Remove the front side panel located behind the cab on the left-hand side of the Expert(t) 2000™ body;

Figure 61. **Front side panel**

5. Locate the settings switch found on the harness feeding the module (see Figure 62. “Packer multi-cycle module”).

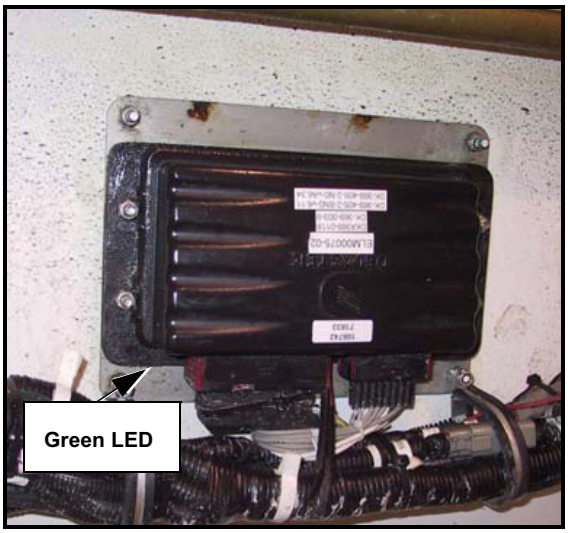


Figure 62. **Packer multi-cycle module**

On the bottom left of the packer module, a green LED flashes on and off (Figure 63. “Status LED”);

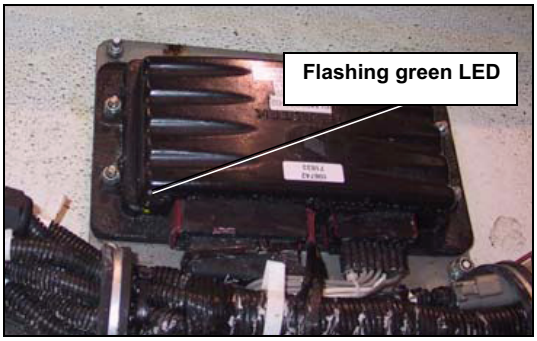


Figure 63. **Status LED**

6. Press and hold the button on the settings switch (see Figure 64. “Multi-cycle settings switch”) for

about three to four seconds. A continuous red light on the LED appears;

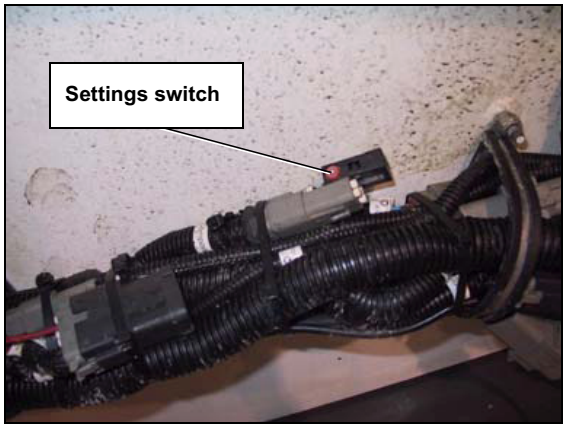


Figure 64. **Multi-cycle settings switch**

7. Press the button the number of times you want the packer to cycle at a time.

Note: The module has been set at the factory to three cycles.

Once you have entered the desired number of cycles, the LED flashes red/green the same number of times to confirm you the new settings have been stored;

8. On the control station or the right-hand side console, press the green **START CYCLE** button to test the new settings of the packer multi-cycle module;

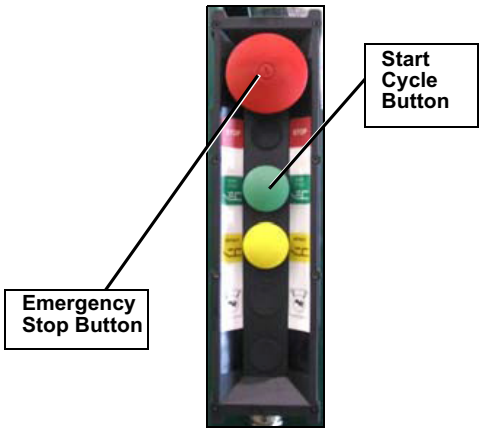


Figure 65. **Right-hand side control station**

9. If the packer performs the desired number of cycles, re-install the side panel. The vehicle is ready to use the new settings.

Note: For any other issues concerning the multi-cycle module, please contact the Labrie Customer Support Center.

Limit Switches Adjustment

The packer limit switches were properly adjusted at the factory for optimal operation of the packer. If a daily cleaning is not properly done behind the packer, it is possible that the limit switches no longer stop the

packer, creating a knocking noise when the packer reaches the end of a stroke (bottoming out). The packer may also not retract far enough to touch the limit switch preventing the automatic cycle to work properly.

After a certain period of time, a misalignment of the components may occur due to the frequent back and forth movement of the packer. An adjustment might be necessary to prevent the cylinders from completely extending and retracting to the end of their strokes.

Two limit switches control the extension and retraction limits of the packer (before the end of cylinder's stroke):

- the packer extension limit switch stops the packer during its extension;
- the packer retraction limit switch stops the packer during its retraction.

Both limit switches are located at the front end of the body, on its right-hand side, between the cab and the body (Figure 66. "Packer cylinder limit switches").

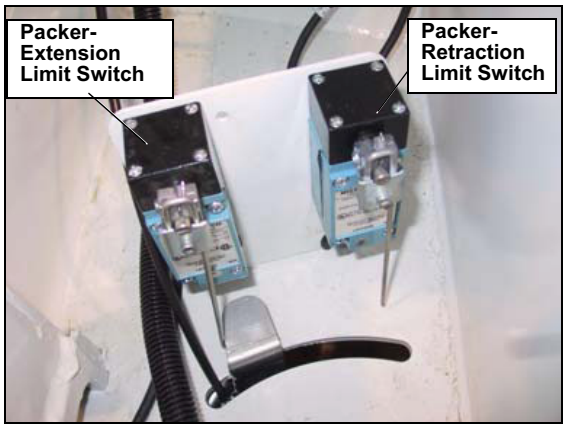


Figure 66. **Packer cylinder limit switches**

Optional proximity switches can also be installed on the vehicle but the adjustment procedure remains the same.

To adjust the packer limit switches, apply the following procedure:

1. Park the Expert(t) 2000™ on level ground, in an area where small debris can fall on the ground for further collection.
2. Apply the parking brake.
3. Using the **PACKER CONTROL SELECTOR** switch on the console, select the right-hand side packer control station (see Figure 33. "Packer control selector switch").

Note: This switch is found only on vehicles equipped with

multiple packer control stations.

Figure 67. **Packer control selector switch**

4. Disable the speed-up system on the console (see Figure 41. “Main console from right-hand side driving position”) by pulling out the **SPEED-UP INHIBITOR** switch;

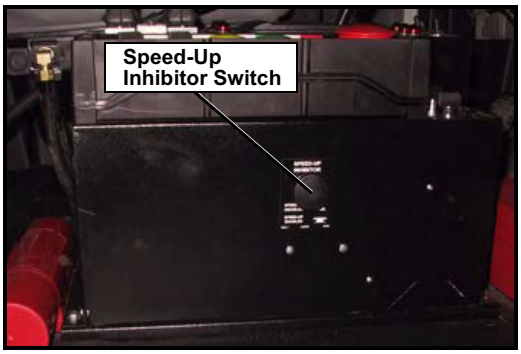


Figure 68. **Main console from right-hand side driving position**

5. Raise the crusher panel (see Figure 42. “Hopper”) using the lever located on the main hydraulic valve (see Figure 70. “Crusher panel lever”);

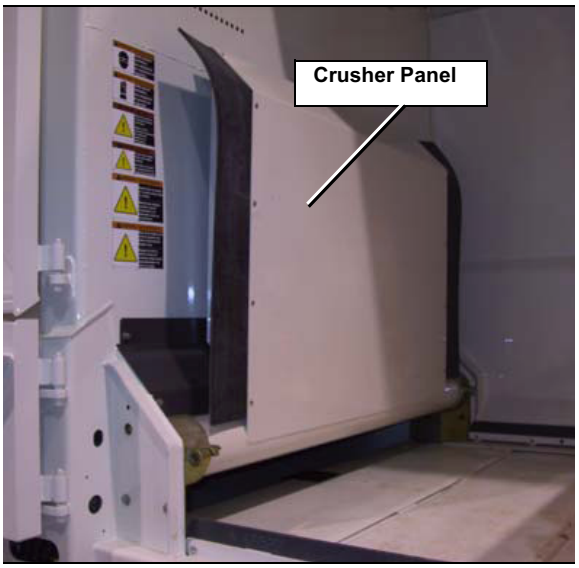


Figure 69. **Hopper**

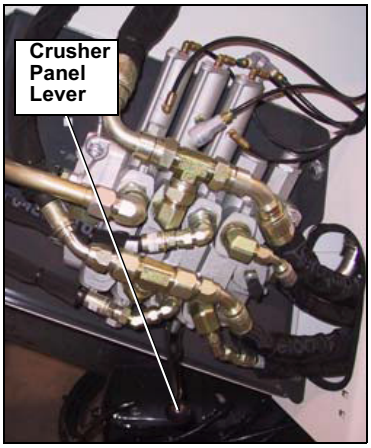


Figure 70. **Crusher panel lever**

6. Push the green **START CYCLE** button to fully extend the packer, then push the red emergency **STOP** button when the packer is fully extended.

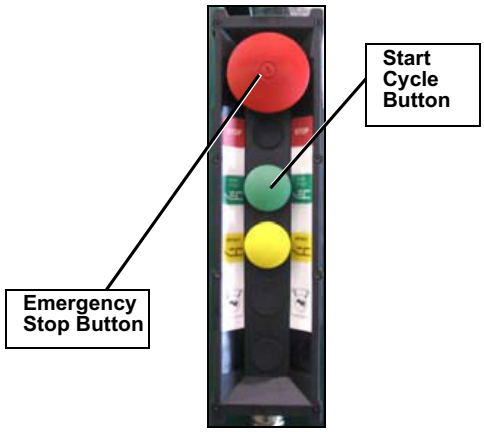


Figure 71. **Right-hand side control station**

Figure 72. **Extended packer**

7. Apply the **Lockout/Tagout** procedure. Refer to “Lockout/ Tagout Procedure” on page 8.

DANGER

APPLY THE LOCKOUT/TAGOUT PROCEDURE TO PREVENT ANY ENGINE START-UP.

8. Locate the limit switches at the front end of the body, on its right-hand side, between the cab and the body (Figure 73. “Packer cylinder limit switches”);

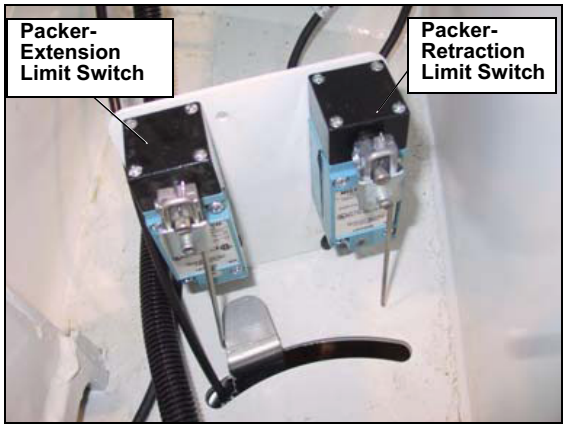


Figure 73. **Packer cylinder limit switches**

9. Srew or unscrew the limit-switch-finger adjustment screw (Figure 74. “Packer cylinder finger”) so the cylinder lever can trigger the switch when the packer cylinder reaches this position;

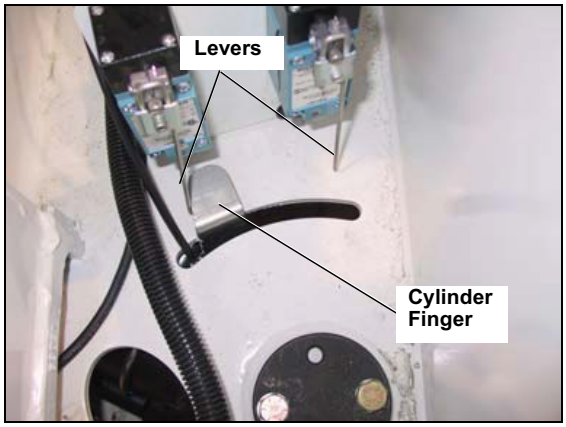


Figure 74. **Packer cylinder finger**

Note: ***If the vehicle is equipped with proximity switches (Figure 75. "Proximity switches"), loosen the proximity switch on the bracket and move the proximity switch over the trigger lever to get the light found on the proximity switch to turn ON. The gap between the proximity switch and the trigger lever must be adjusted to 3/16 of an inch.***

Figure 75. **Proximity switches**

10. To adjust the packer retraction limit switch, retract the packer to 1" before the fully retracted position, using the yellow button on the packer control station;
11. Push the red emergency-stop button when the packer reaches the right position;
12. Stop the engine and apply the lockout/tagout procedure. Refer to "Lockout/Tagout Procedure" on page 8 for details.

⚠ DANGER

NEVER CLIMB IN THE HOPPER WHILE THE ENGINE IS RUNNING.

13. Locate the limit switch on the right-hand side of the vehicle (see Figure 76. “Packer limit switches”);

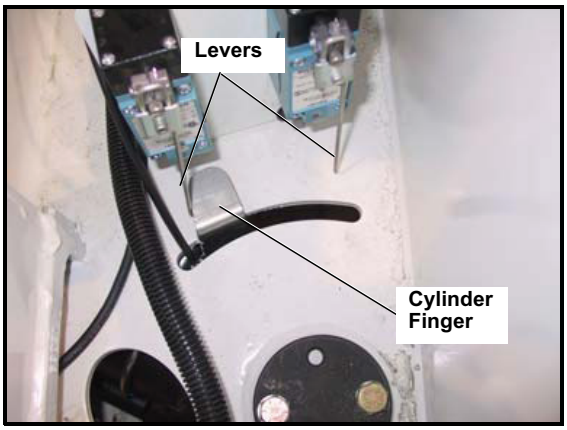


Figure 76. **Packer limit switches**

14. Srew or unscrew the limit-switch-finger adjustment screw (Figure 77. “Packer cylinder finger”) so the cylinder lever can trigger the switch when the packer cylinder reaches this position;

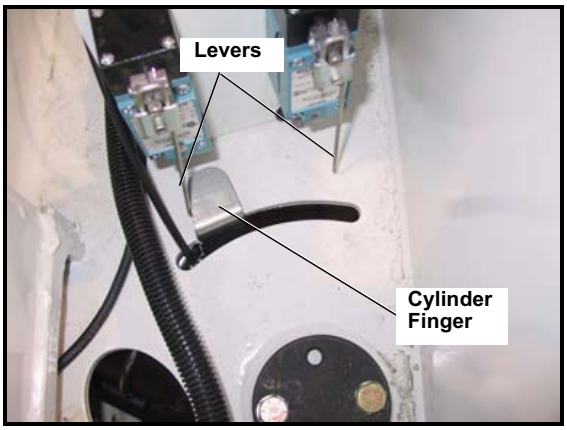


Figure 77. **Packer cylinder finger**

15. Start the engine;

16. Test the packer for a full cycle. Make sure there is no knocking noise at either end of the packer cylinder stroke.

Sliding Shoes and Wear Pads

Use a pry bar to move the packer up and down and from side to side and if the packer has a vertical movement greater than 3/16” or a side movement greater than 1/8”, verify both packer’s sliding shoes as well as wear pads (see Figure 78. “Fully retracted packer”) under the side rails.

Figure 78. **Fully retracted packer**

Two different types of steel are used on packer guiding system:

- AR-425 type steel; and
- AR-500 type steel.

The sliding shoes are made of AR-425 type steel to wear out before floor guides, which are made of AR-500. Refer to the *Parts Catalog* for replacement part numbers.

To keep the packer in good working order and to prevent breakdowns, replace the sliding shoes and wear pads before extensive wear or damage appears on the hopper floor and walls.

Sliding Shoes Replacement

Note: It is not necessary to remove the packer to perform this procedure.

To replace the sliding shoe, apply the following procedure:

1. Make sure the parking brake is applied and the vehicle is tagged out for maintenance purposes (refer to “Lockout/Tagout Procedure” on page 8);
2. Start the engine and engage the hydraulic system;
3. Disable the speed-up system on the console (Figure 79. “Main console from right-hand side driving position”) by pulling out the **SPEED-UP INHIBITOR** switch;

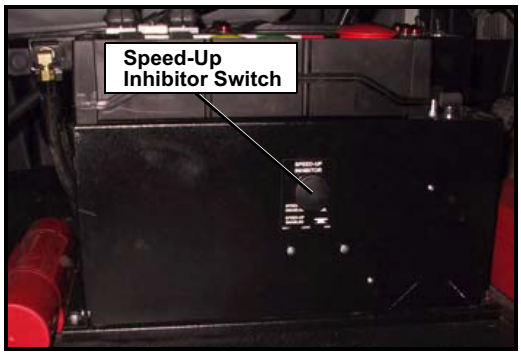


Figure 79. **Main console from right-hand side driving position**

4. Then using the selector switch on the console, select the right-hand side packer control station (Figure 80. “Packer control selector”). This switch exists only on vehicles equipped with multiple packer control stations;

Figure 80. **Packer control selector**

5. If the packer is not fully extended, press the green button on the packer control station to extend it;
6. Turn the engine and hydraulic pump off;
7. Remove the tack weld from behind the packer (Figure 80. “Packer control selector”). The weld must be cut out before extending the packer;
8. Start the engine;
9. Engage the hydraulic pump to extend the packer about 18 inches before the end of the stroke (Figure 81. “Packer extended 18” from end of stroke”);

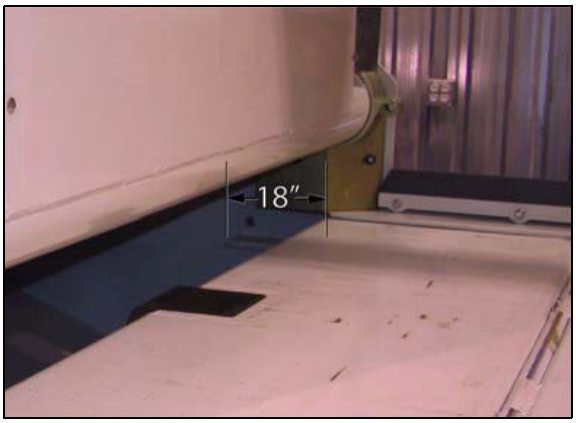


Figure 81. **Packer extended 18” from end of stroke**

10. Turn the engine and hydraulic pump off;
11. Cut the welding tracks (Figure 82. “Sliding shoe”);

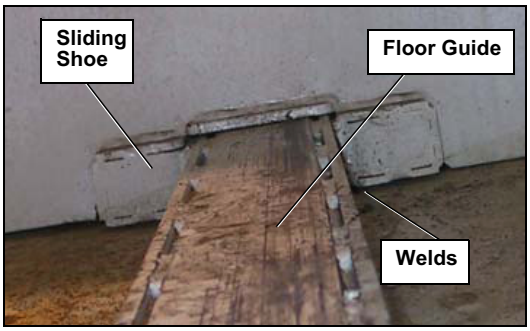


Figure 82. **Sliding shoe**

Note: ***In order to move the packer (retract or extend) for a short***

distance, press on the green (or yellow) button then immediately push the red button to stop the packer. Pull out the red button and repeat the process until the packer reaches the desired position.

12. Tack weld a piece of steel tubing to the floor rail and to the front of the sliding shoe (Figure 83. “Sliding shoe”);

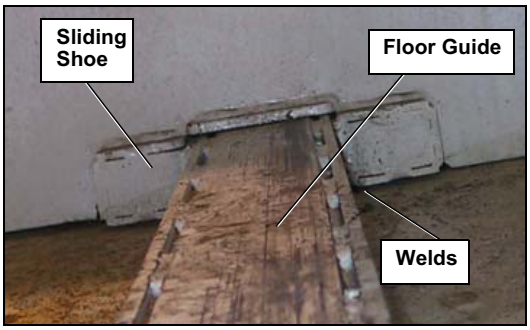


Figure 83. **Sliding shoe**

13. Then start the engine, engage the hydraulic pump and slowly retract the packer by pressing the yellow button and the red button;
14. The sliding shoes will come out from under the packer as it is retracting (Figure 84. “View from behind the packer when fully retracted”);
15. Remove the old sliding shoes and plate. Make sure to remove the weld on the floor guide using a grinder.
16. Align the new sliding shoe in front of the packer and slowly extend the packer to make the sliding shoe go under the packer;
17. Once the sliding shoes are back in place, weld the shoes and the plates (Figure 83. “Sliding shoe”);
18. If the wear pads at the top of the packer need to be replaced, refer to “Wear Pads Replacement” on page 57
19. Retract the packer;
20. Weld the four (4) sliding shoes and both plates to the packer (Figure 84. “View from behind the packer when fully retracted”);
21. Test the packer for proper operation.
22. If the packer is binding, to find out where the interference is, apply primer paint on the floor guide.
23. Run the packer a few times.
24. The location where the paint comes off indicates the surface to be grinded.

Figure 84. **View from behind the packer when fully retracted**

Wear Pads Replacement

Replacement of the wear pads at the top of the packer is required when vertical movement of the packer is greater than 3/16” (check with a pry bar).

This section will provide the full procedure to remove and change both wear pads at the top of the packer.

Apply the following procedure to remove and replace the wear pads:

1. Make sure the parking brake is applied and the vehicle is tagged out for maintenance purposes (refer to “Lockout/Tagout Procedure” on page 8);

⚠ DANGER

APPLY THE LOCKOUT/TAGOUT PROCEDURE TO PREVENT ANY ENGINE START-UP.

⚠ DANGER

NEVER CLIMB IN THE HOPPER WHILE THE ENGINE IS RUNNING.

2. Start the engine and engage the hydraulic pump;
3. Disable the speed-up system on the console (Figure 85. “In-cab console from right-hand side driving position”) by pulling out the **SPEED-UP INHIBITOR** switch;

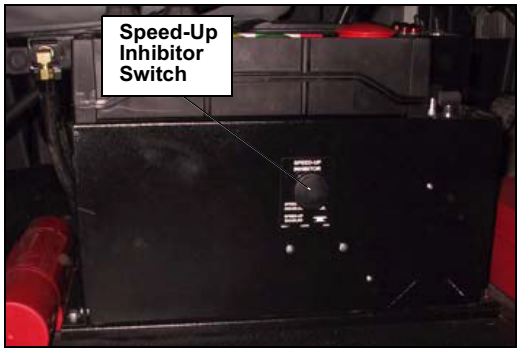


Figure 85. **In-cab console from right-hand side driving position**

4. Using the **PACKER CONTROL SELECTOR** switch on the console, select the right-hand side packer control station (see Figure 86. “Packer control selector switch”).

Note: This switch is found only on vehicles equipped with multiple packer control stations.

Figure 86. **Packer control selector switch**

5. Raise the crusher panel (see Figure 87. “Hopper”) using the lever located on the main hydraulic valve (see Figure 88. “Crusher panel lever”);

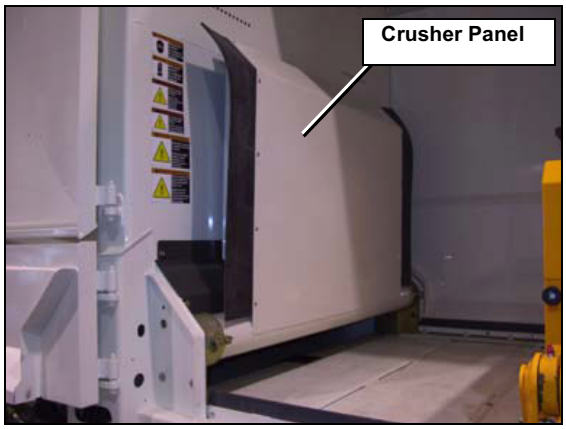


Figure 87. **Hopper**

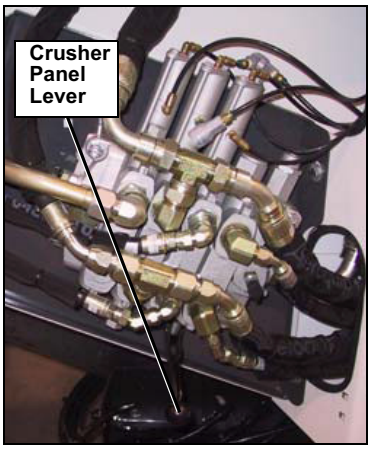


Figure 88. **Crusher panel lever**

6. Using the joystick, fully retract the optional Helping Hand™ in the hopper;

7. Push the yellow **RETRACT** button to fully retract the packer, then push the red emergency **STOP** button when the packer is fully retracted.

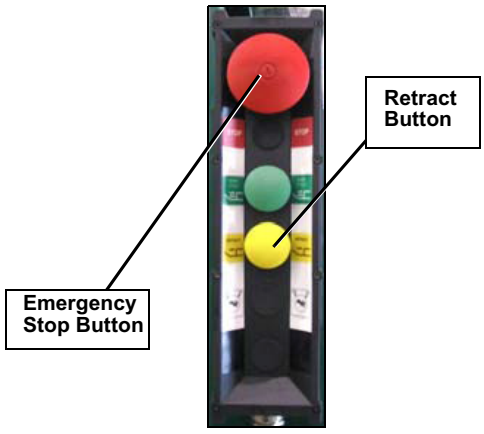


Figure 89. **Right-hand side control station**

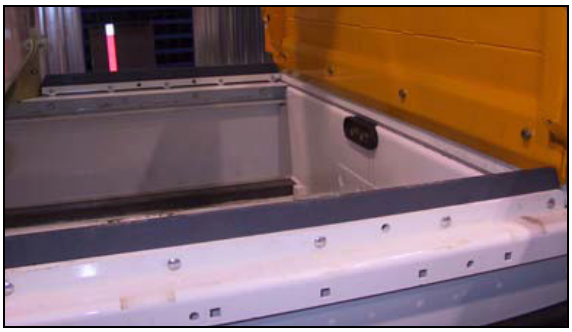


Figure 90. **Retracted packer**

Note: To move the packer (retract or extend) for a short distance, press on the green (or yellow) button then immediately push the red button to stop the packer. Pull the red button and repeat the procedure until the packer reaches the desired position.

8. Turn the engine and hydraulic pump off;

⚠ DANGER

NEVER CLIMB IN THE HOPPER WHILE THE ENGINE IS RUNNING.

9. Unbolt both hopper side panels (Figure 91. “Hopper side panel”) located below the hopper doors of the Expert(t) 2000™;

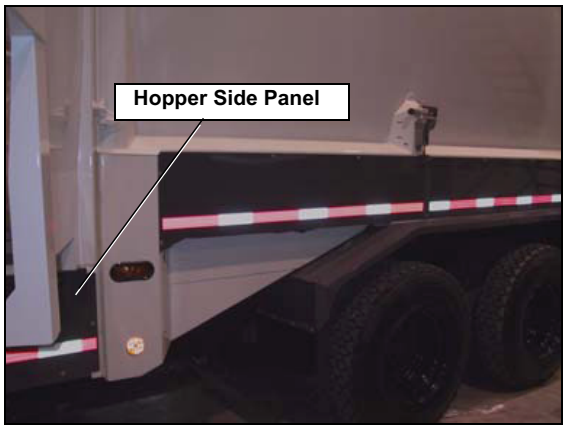


Figure 91. **Hopper side panel**

10. Unbolt the deflector stands on both sides of the hopper to remove them. (Figure 92. “Side rail and deflector stand”);.

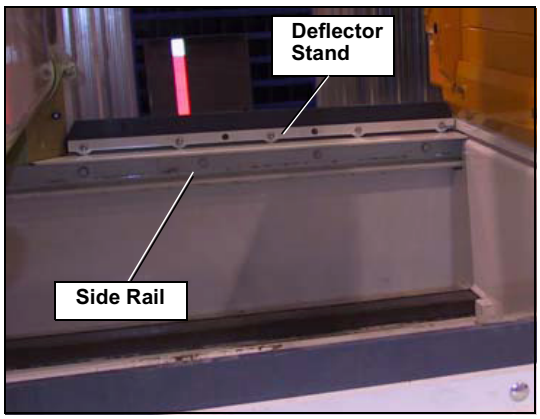


Figure 92. **Side rail and deflector stand**

11. Unbolt the side rails from the right- and left-hand side hopper walls (Figure 92. “Side rail and deflector stand” & Figure 93. “Side rails removal”);

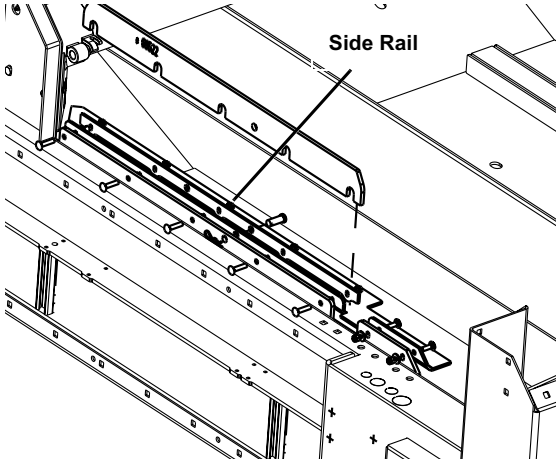


Figure 93. **Side rails removal**

12. When both side rails are removed, start the engine and engage the hydraulic pump;
13. Extend the packer about 12 inches before the end of the stroke;
14. Turn the engine and hydraulic pump off;

⚠ DANGER

NEVER CLIMB IN THE HOPPER WHILE THE ENGINE IS RUNNING.

15. Replace both wear pads and bolt them back in place;
16. Start the engine and engage the hydraulic pump;
17. Retract the packer;
18. Reinstall the side rails, plastic shields and deflector stands back in place.
19. Turn the engine and hydraulic pump off;

⚠ DANGER

NEVER CLIMB IN THE HOPPER WHILE THE ENGINE IS RUNNING.

Packer Removal Procedure

To remove the packer, apply the following procedure:

1. Make sure the parking brake is applied and the vehicle is tagged out for maintenance purposes (refer to “Lockout/Tagout Procedure” on page 8);

⚠ DANGER

APPLY THE LOCKOUT/TAGOUT PROCEDURE TO PREVENT ANY ENGINE START-UP.

⚠ DANGER

NEVER CLIMB IN THE HOPPER WHILE THE ENGINE IS RUNNING.

2. Start the engine and engage the hydraulic pump;
3. Disable the speed-up system on the console (Figure 94. “In-cab console from right-hand side driving position”) by pulling out the **SPEED-UP INHIBITOR** switch;

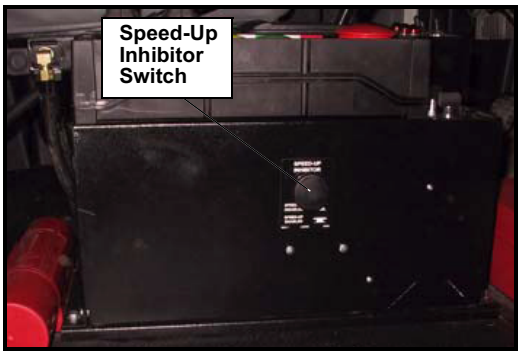


Figure 94. **In-cab console from right-hand side driving position**

4. Using the **PACKER CONTROL SELECTOR** switch on the console, select the right-hand side packer control station (see Figure 95. “Packer control selector switch”).

Note: This switch is found only on vehicles equipped with multiple packer control stations.

Figure 95. **Packer control selector switch**

5. Raise the crusher panel (see Figure 96. “Hopper”) using the lever located on the main hydraulic valve (see Figure 97. “Crusher panel lever”);

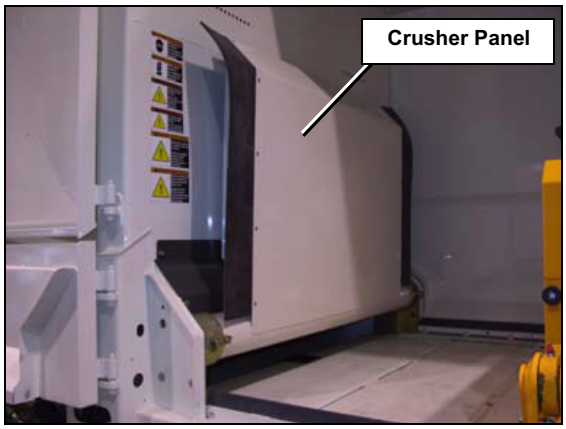


Figure 96. **Hopper**

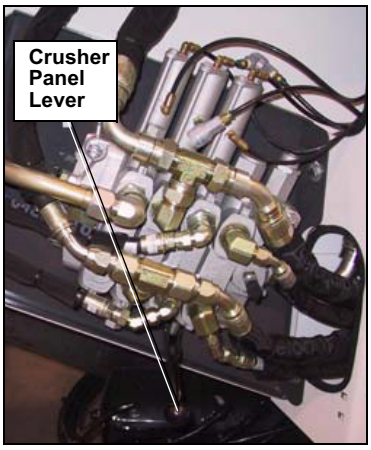


Figure 97. **Crusher panel lever**

6. Using the joystick, fully extend the optional Helping Hand™;

7. Push the yellow **RETRACT** button to fully retract the packer, then push the red emergency **STOP** button when the packer is fully retracted;

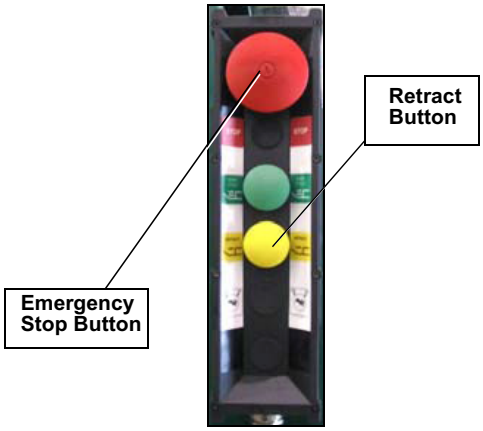


Figure 98. **Right-hand side control station**

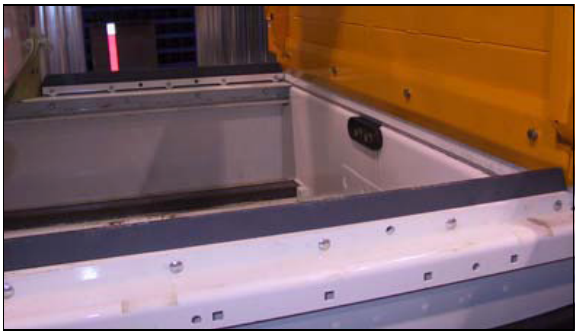


Figure 99. **Retracted packer**

Note: To move the packer (retract or extend) for a short distance, press on the green (or yellow) button, then immediately push the red button to stop the

packer. Pull the red button and repeat the procedure until the packer reaches the desired position.

8. Turn the engine and hydraulic pump off;

⚠ DANGER

NEVER CLIMB IN THE HOPPER WHILE THE ENGINE IS RUNNING.

9. Unbolt both hopper side panels (Figure 100. “Hopper side panel”) located below the hopper doors of the Expert(t) 2000™;

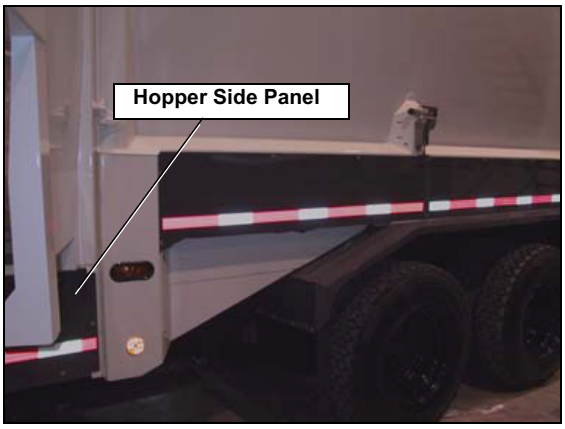


Figure 100. **Hopper side panel**

10. Unbolt the deflector stands on both sides of the hopper to remove them. (Figure 101. “Side rail and deflector stand”).

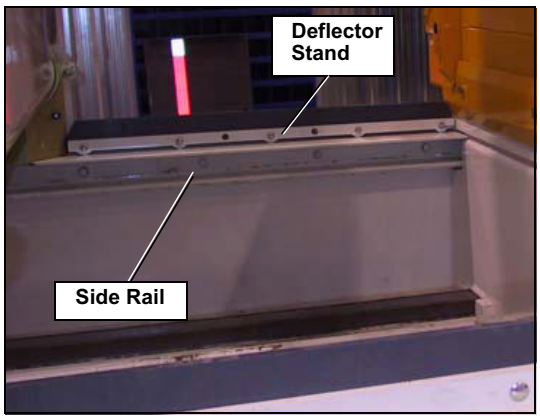


Figure 101. **Side rail and deflector stand**

11. Unbolt the side rails from the right- and left-hand side hopper walls (Figure 101. “Side rail and deflector stand” & Figure 102. “Side rails removal”);

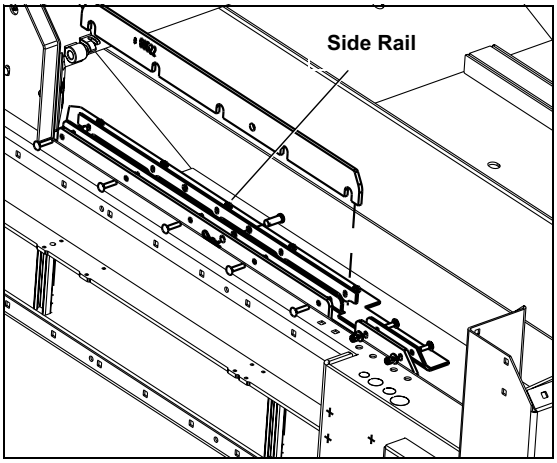


Figure 102. **Side rails removal**

12. When both side rails are removed, remove the arm

doghouse panel scraper (if applicable) from the hopper.

Note: Units equipped with an automated Helping Hand™ arm are equipped with an arm doghouse panel scraper.

Refer to “Arm Doghouse Panel Scraper Removal and Wear Pad Replacement” on page 73 for details.

13. Replace both scraper wear pads;
14. Start the engine and engage the hydraulic pump;
15. Retract the packer (Figure 103. “Fully retracted packer”);

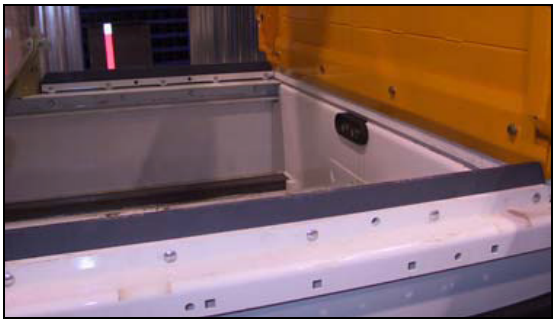


Figure 103. **Fully retracted packer**

16. Stop the hydraulic pump and the engine;

⚠ DANGER

NEVER CLIMB IN THE HOPPER WHILE THE ENGINE IS RUNNING.

17. Remove the swivel-style panel from the hopper. Refer to “Swivel-style Panel Removal and Wear Pad Replacement” on page 71 for details.
18. Start the engine and engage the hydraulic system;
19. Extend the packer about 12” from the end of the stroke;
20. Stop the hydraulic pump and the engine;

⚠ DANGER

NEVER CLIMB IN THE HOPPER WHILE THE ENGINE IS RUNNING.

21. Remove the access cover and the cylinder pin (Figure 104. “Packer cylinder pins, access cover and greasing hoses”).

Note: The greasing hoses must be disconnected from the cylinder pins; these hoses are

located under the follower panel.

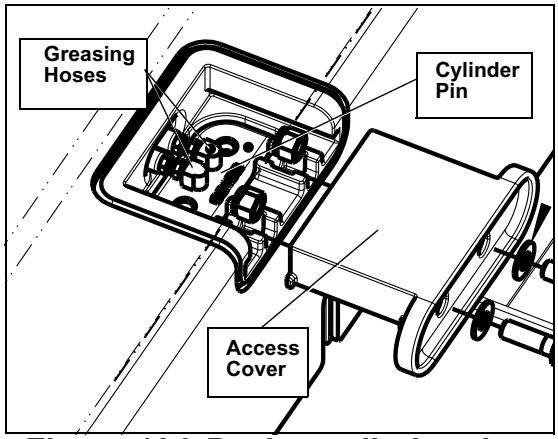


Figure 104. **Packer cylinder pins, access cover and greasing hoses**

Note: The cylinder pins top plates are provided with two (2) threaded holes to use as a puller by inserting two (2) ½-NC bolts.

22. After removing the cylinder pin, start the engine and retract the hydraulic cylinders;

23. Stop the hydraulic pump and the engine;

⚠ DANGER

NEVER CLIMB IN THE HOPPER WHILE THE ENGINE IS RUNNING.

24. Remove the four packer roller assemblies from the follower panels;

25. Fold the follower panels over the packer;

26. Weld the follower panels to the packer;

27. Attach the packer to a lifting device (fork lifter) in order to extract it from the hopper;

28. Re-install the new packer into the hopper checking the alignment of the packer with the floor guides;

29. Install a new wiper blade on each side of the packer (Figure 105. “Wiper blade”);

Note: These wiper blades may require to be adjusted to fit between the new packer and the hopper walls.

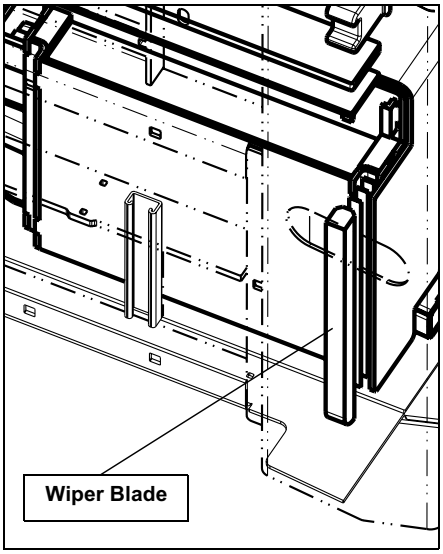


Figure 105. **Wiper blade**

30. Once the packer is installed in the hopper, install roller assemblies and reverse the procedure to reconnect the hydraulic cylinders and re-install both side rails;
31. Bolt the rails along the top edge of the hopper wall (Figure 101. “Side rail and deflector stand”);
32. Once finished re-assembling the removed components, lubricate and check for proper operation of the packer.

⚠ DANGER

NEVER CLIMB IN THE HOPPER WHILE THE ENGINE IS RUNNING.

Floor Guide Replacement Procedure

After years of hard work, the floor guides inside the hopper may require replacement. The following step-by-step procedure will help removing and replacing the floor guides inside the hopper.

To replace the floor guide, apply the following procedure:

1. Make sure the parking brake is applied and the vehicle is tagged out for maintenance purposes (refer to “Lockout/Tagout Procedure” on page 8);
2. Start the engine and engage the hydraulic system;
3. Disable the speed-up system on the console (Figure 106. “In-cab console from right-hand side driving position”) by pulling out the **SPEED-UP INHIBITOR** switch;

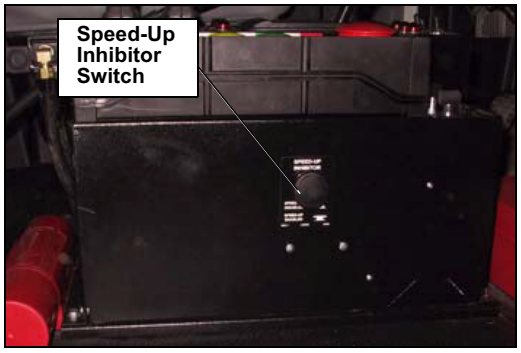


Figure 106. **In-cab console from right-hand side driving position**

4. Using the selector switch on the console, select the right-hand side packer control station (Figure 107. “Packer control selector”);

Note: This switch exists only on vehicles equipped with multiple packer control stations.

Figure 107. **Packer control selector**

5. Place the optional arm a few feet away from the body;

6. Remove the packer from the hopper (refer to “Packer Removal Procedure” on page 61);
7. Retract the hydraulic cylinders and move them out of the way;
8. Mark the exact location of both floor guides to ensure the proper positioning of the new ones;
9. Using a grinder or cutting tool, remove the floor guides by cutting the welds;
10. Clean the hopper floor and wall surfaces from any metal shavings or dirt;
11. Position new guides onto the hopper floor;

Note: Do not tack nor weld yet.

12. Using a proper lifting device, bring the packer over the hopper;
13. Lower the packer on the floor guides, and align them with the packer;
14. Once the packer sits on the floor guides, center the packer (and the floor guides) in the hopper, making sure they are parallel to the hopper wall (see Figure 108. “View from behind the packer when fully extended”);

Figure 108. **View from behind the packer when fully extended**

15. Tack weld the floor guides to the hopper floor (see Figure 109. “Floor guide top-view”);

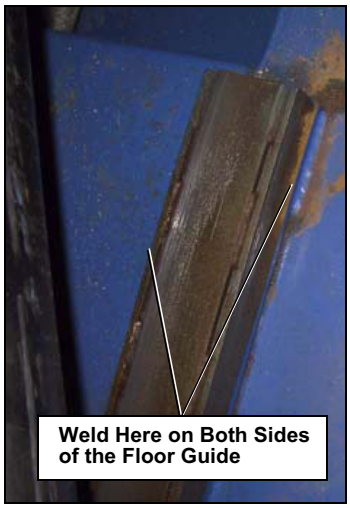


Figure 109. **Floor guide top-view**

16. Adjust the packer wipers on both sides (UHMW plastic);

17. Connect the packer cylinders (refer to “Packer Removal Procedure” on page 61);

18. *Slowly* retract the packer under the rails until the end of the packer stroke. Keep the packer centered with the hopper, re-install the side rails then tack the floor guides to the hopper floor (see Figure 110. “Floor guide end-view”);

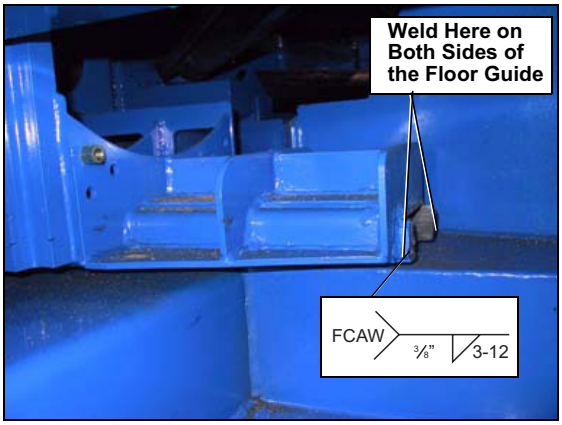


Figure 110. **Floor guide end-view**

19. Extend the packer to the middle of the hopper; verify the alignment with the hopper side rails;

20. Stitch weld the floor guides going towards the back of the vehicle;

21. Fully extend the packer to finish welding under the packer;

22. Check for proper operation.

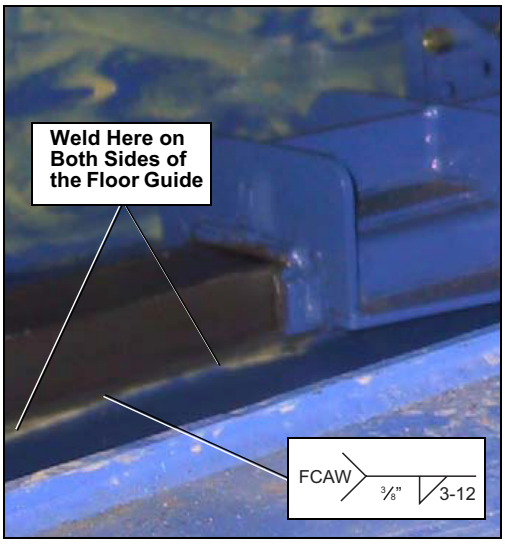


Figure 111. **Floor guide end-view**

Packer Roller Replacement

Packer rollers need to be replaced when damaged or showing excessive wear or flat spots.

To replace the packer rollers, apply the following procedure:

1. Make sure the parking brake is applied and the vehicle is tagged out for maintenance purposes (refer to “Lockout/Tagout Procedure” on page 8);

⚠ DANGER

APPLY THE LOCKOUT/TAGOUT PROCEDURE TO PREVENT ANY ENGINE START-UP.

2. Fully retract the packer;

⚠ DANGER

NEVER CLIMB IN THE HOPPER WHILE THE ENGINE IS RUNNING.

3. Stop the engine.
4. Remove the front covers over the cylinder pins;
5. Unbolt the roller assembly;
6. Clean the roller axle;
7. Grease the new roller assembly;
8. Bolt the assembly in place;
9. Put the front covers back on the cylinder pins;
10. Check full cycle for smooth operation.

Swivel-style Panel Removal and Wear Pad Replacement

To remove the swivel-style panel and replace the wear pad, apply the following procedure:

1. Make sure the parking brake is applied and the vehicle is tagged out for maintenance purposes (refer to “Lockout/Tagout Procedure” on page 8);
2. Start the engine and engage the hydraulic system;
3. Disable the speed-up system on the console (Figure 112. “In-cab console from right-hand side driving position”) by pulling out the **SPEED-UP INHIBITOR** switch;

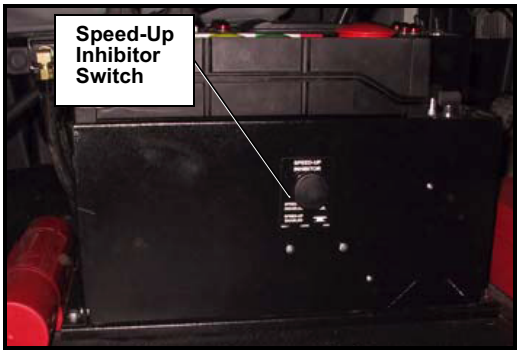


Figure 112. **In-cab console from right-hand side driving position**

4. Using the selector switch on the console, select the right-hand side packer control station (Figure 113. “Packer Control Selector”).

Note: This switch exists only on vehicles equipped with multiple packer control stations;

Figure 113. **Packer Control Selector**

5. Fully extend the packer;
6. Press the red emergency stop button to keep it at this position;

⚠ DANGER

NEVER CLIMB IN THE HOPPER WHILE THE ENGINE IS RUNNING.

7. Disengage the hydraulic pump and stop the engine.
8. Using the handle at the upper left corner of the panel, bring the swivel-style panel to a vertical

position and hold it (Figure 114. “Swivel-style panel safety devices”);

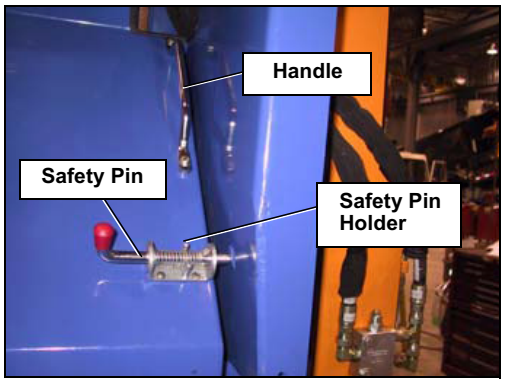


Figure 114. **Swivel-style panel safety devices**

9. Remove the safety pin from its holder and put the pin in the hole at the bottom left of the swivel-style panel (Figure 114. “Swivel-style panel safety devices”);

⚠CAUTION

THIS PIN IS A MANDATORY SAFETY DEVICE, PREVENTING FROM BEING CAUGHT AT THE PINCH POINT, WHEN MANIPULATING THE SWIVEL-STYLE PANEL.

⚠WARNING

INSTALL THE SWIVEL-STYLE PANEL SAFETY PIN TO PREVENT HANDS OR FINGERS FROM BEING CAUGHT AT THE PINCH POINT OF THE SWIVEL-STYLE PANEL (SEE FIGURE 115. “TILTED SWIVEL-STYLE PANEL” FOR DETAILS).

10. Continue tilting the swivel-style panel over the packer (Figure 115. “Tilted swivel-style panel”);

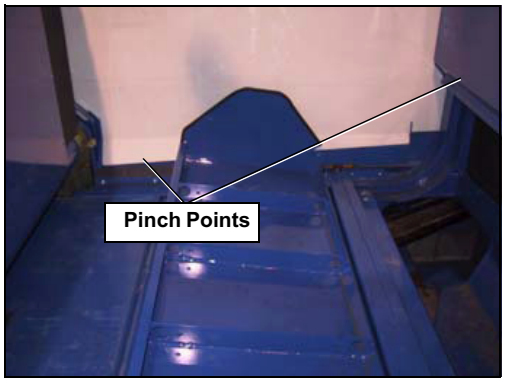


Figure 115. **Tilted swivel-style panel**

11. Remove retaining screws holding the wear pad;
12. Install the new wear pad and tighten bolts;
13. Re-install the swivel-style panel back in place;

14. Check for even contact of wear pad with the packer and follower panels.

Arm Doghouse Panel Scraper Removal and Wear Pad Replacement

Units equipped with an automated Helping Hand™ arm are equipped with an arm doghouse panel scraper preventing refuse build-up in front of the packer cylinder.

To remove the arm doghouse panel scraper and replace the wear pad, apply the following procedure:

1. Make sure the parking brake is applied and the vehicle is tagged out for maintenance purposes (refer to “Lockout/Tagout Procedure” on page 8);

⚠ DANGER

APPLY THE LOCKOUT/TAGOUT PROCEDURE TO PREVENT ANY ENGINE START-UP.

⚠ DANGER

NEVER CLIMB IN THE HOPPER WHILE THE ENGINE IS RUNNING.

2. Start the engine and engage the hydraulic pump;

3. Disable the speed-up system on the console (Figure 116. “In-cab console from right-hand side driving position”) by pulling out the **SPEED-UP INHIBITOR** switch;

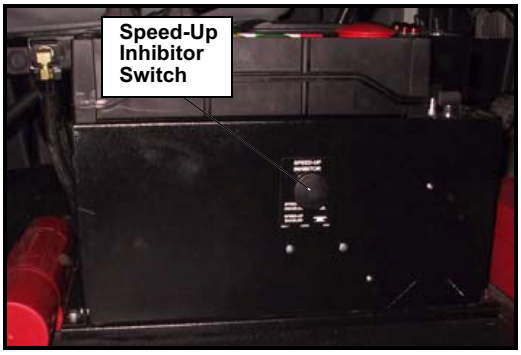


Figure 116. **In-cab console from right-hand side driving position**

4. Using the **PACKER CONTROL SELECTOR** switch on the console, select the right-hand side packer control station (see Figure 117. “Packer control selector switch”).

Note: This switch is found only on vehicles equipped with multiple packer control stations.

Figure 117. **Packer control selector switch**

5. Push the green **START CYCLE** button to fully extend the packer, then push the red emergency **STOP** button when the packer is fully extended.

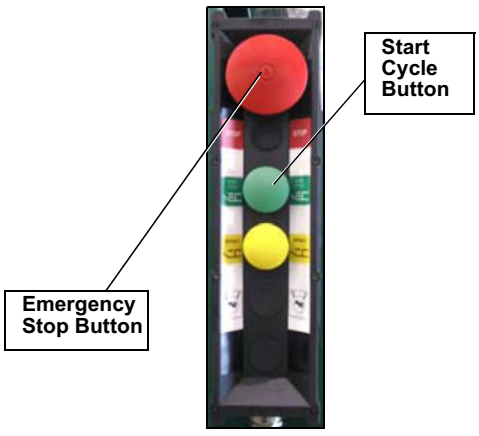


Figure 118. **Right-hand side control station**

Figure 119. **Fully extended packer**

6. Turn the engine and hydraulic pump off;

⚠ DANGER

NEVER CLIMB IN THE HOPPER WHILE THE ENGINE IS RUNNING.

7. Remove the Helping Hand™ doghouse panel;
8. Starting on the right-hand side of the truck, unbolt both arm doghouse panel scraper retaining bolts;
9. On the left-hand side of the truck, unbolt both arm doghouse panel scraper retaining bolts;
10. Still from the left-hand side of the truck, pull the arm doghouse panel scraper from under the doghouse to extract it;
11. Replace the nylon strip on the arm doghouse panel scraper;
12. Reinstall the arm doghouse panel scraper back in place;
13. Check for even contact of wear pad with the packer and follower panels.

Packer Cylinder Replacement

To remove the packer cylinder, apply the following procedure:

1. Make sure the parking brake is applied and the vehicle is tagged out for maintenance purposes (refer to “Lockout/Tagout Procedure” on page 8);

⚠ DANGER

APPLY THE LOCKOUT/TAGOUT PROCEDURE TO PREVENT ANY ENGINE START-UP.

⚠ DANGER

NEVER CLIMB IN THE HOPPER WHILE THE ENGINE IS RUNNING.

2. Start the engine and engage the hydraulic pump;
3. Disable the speed-up system on the console (Figure 116. “In-cab console from right-hand side driving position”) by pulling out the **SPEED-UP INHIBITOR** switch;

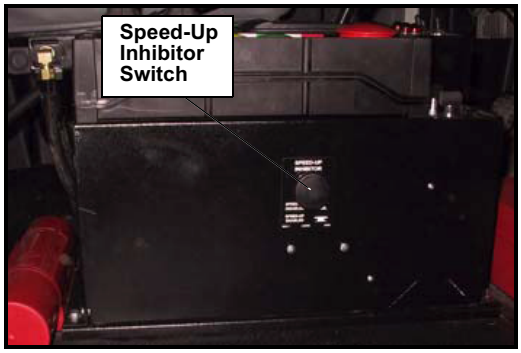


Figure 120. **In-cab console from right-hand side driving position**

4. Using the **PACKER CONTROL SELECTOR** switch on the console, select the right-hand side packer control station (see Figure 117. “Packer control selector switch”).

Note: This switch is found only on vehicles equipped with multiple packer control stations.

Figure 121. **Packer control selector switch**

5. Using the joystick, extend the Helping Hand™ along the hopper.

6. Raise the crusher panel (see Figure 132. “Hopper”) using the lever located on the main hydraulic valve (see Figure 133. “Crusher panel lever”);

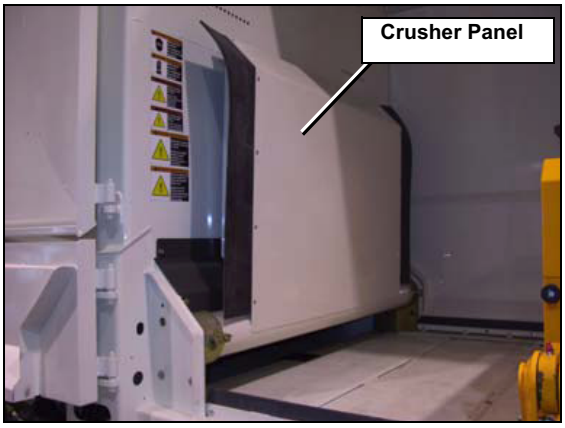


Figure 122. **Hopper**

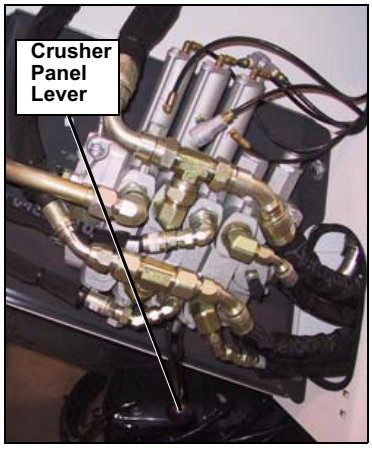


Figure 123. **Crusher panel lever**

7. Push the green **START CYCLE** button to fully extend the packer, then push the red emergency **STOP** button when the packer is fully extended.

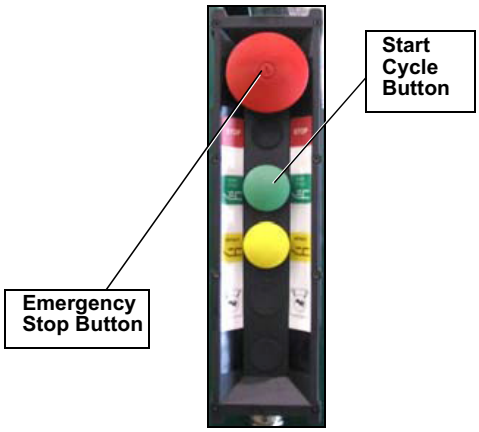


Figure 124. **Right-hand side control station**

Figure 125. **Fully extended packer**

8. Turn the engine and hydraulic pump off;

DANGER

NEVER CLIMB IN THE HOPPER WHILE THE ENGINE IS RUNNING.

9. Remove the swivel-style panel. Refer to “Swivel-style Panel Removal and Wear Pad Replacement” on page 71 for details.
10. Open the access cover and remove the pin from the cylinder rods.

Note: The cylinder pins top plates are provided with two (2) threaded holes to use as a puller by inserting two (2) ½-NC bolts.

11. Remove the roller assemblies on the follower panels (refer to “Packer Roller Replacement” on page 70);
12. Fold the follower panels over the packer(Figure 126. “Packer with follower panels in folded position”);

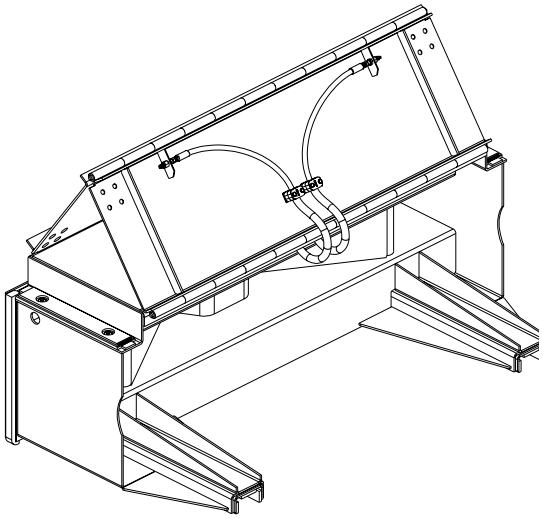


Figure 126. **Packer with follower panels in folded position**

13. Start the engine and engage the hydraulic system;
14. Retract the cylinders;
15. Disengage the pump;
16. Stop the engine;

DANGER

NEVER CLIMB IN THE HOPPER WHILE THE ENGINE IS RUNNING.

17. Remove the hydraulic hoses from the cylinders;

Note: Use absorbent material to catch oil spills.

18. Attach and secure the cylinder to a lifting device;
19. Remove the limit switch target and save it for the new cylinder;
20. Remove the side pin that holds the cylinder.

Note: Protect the limit switch during the removal of the cylinder;

21. Remove the cylinder bracket used for both limit switches and save them for the new cylinder (Figure 127. “Packer cylinder limit switches”) ;

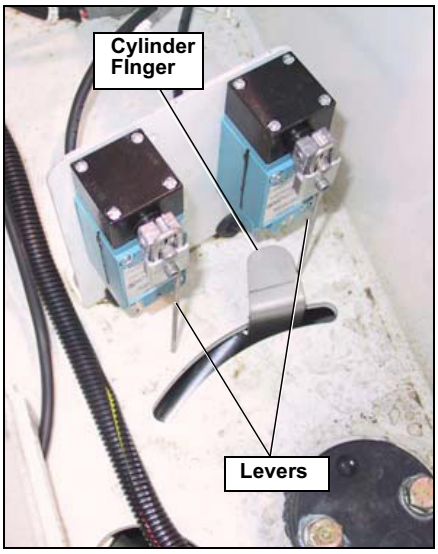


Figure 127. **Packer cylinder limit switches**

⚠CAUTION

PACKER CYLINDERS MUST BE REMOVED WITH A LIFTING DEVICE.

22. Replace the faulty cylinder with a new one. Contact the Labrie Customer Support Center for replacement under warranty;
23. Install the cylinder fingers on the new cylinders. The limit switches may require to be re-adjusted afterwards; refer to “Limit Switches Adjustment” on page 48;
24. Reverse the procedure to install all the other components (pins, rollers, etc.);
25. Prior to installing the cylinder pins, apply an anti-seize compound on the pins;
26. Grease the cylinder pins;
27. Start the engine and engage the hydraulic system;
28. Check for proper operation.

TAILGATE AND BODY HINGES MAINTENANCE

Tailgate Locking Mechanism (Single Tailgate)

It is important to lubricate the tailgate hinges and the locking mechanism with multipurpose grease as per the lubricating schedule (refer to “Recommended lubricants” on page 123).

⚠ CAUTION

EXCESSIVE WEAR MIGHT BE DANGEROUS AND HARMFUL TO THE PROPER WORKING ORDER OF THE TAILGATE.

Also, inspect the welds around hinges. The proper working order of the following components is also to be checked (Figure 131. “Tailgate locking components” to Figure 137. “Body-to-chassis left hinge”):

- Tailgate hydraulic cylinders;

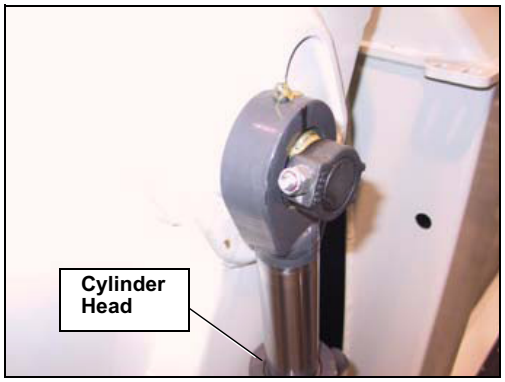


Figure 128. **Right-hand side tailgate cylinder**

- Cylinder retaining bolts and circlips;

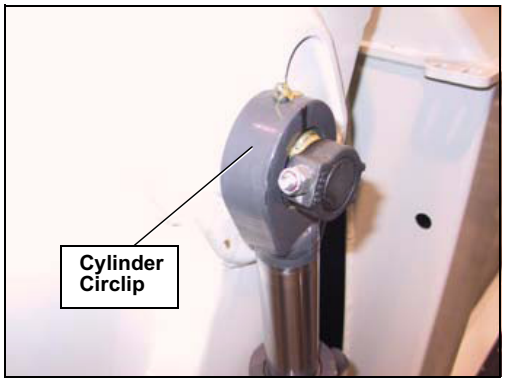


Figure 129. **Tailgate left cylinder circlip**

- Tailgate hinges and pins;

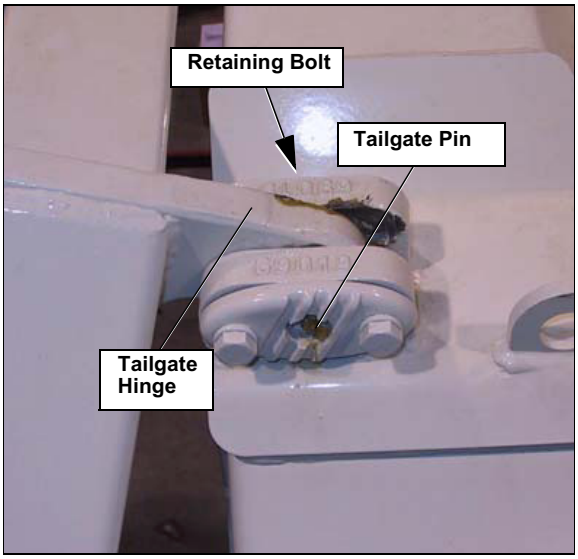


Figure 130. **Right side tailgate hinge and pin**

- Wear on the locking mechanism;

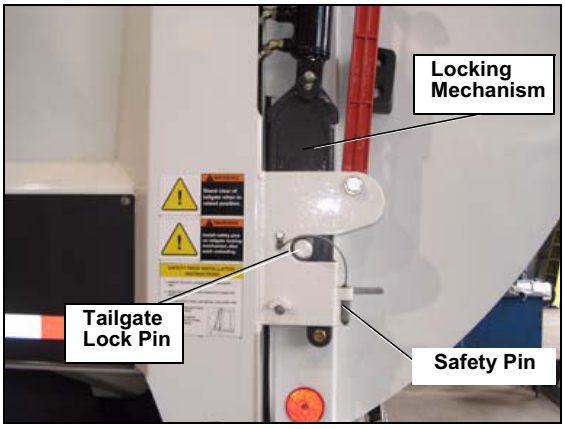


Figure 131. **Tailgate locking components**

- Wear on the tailgate lock pins;
- Tailgate rubber seal.

Figure 132. **Tailgate rubber seal**

Tailgate Seal and Hinges Inspection

Tailgate hinge pins must not have any sign of wear or metal fatigue.

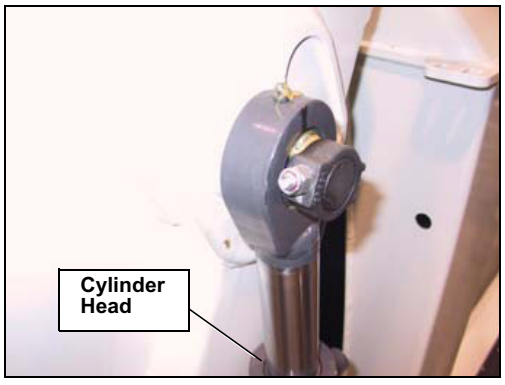


Figure 133. **Right-hand side tailgate cylinder**

The retaining bolts must be kept tight (Figure 134. “Right side tailgate hinge and pin”).

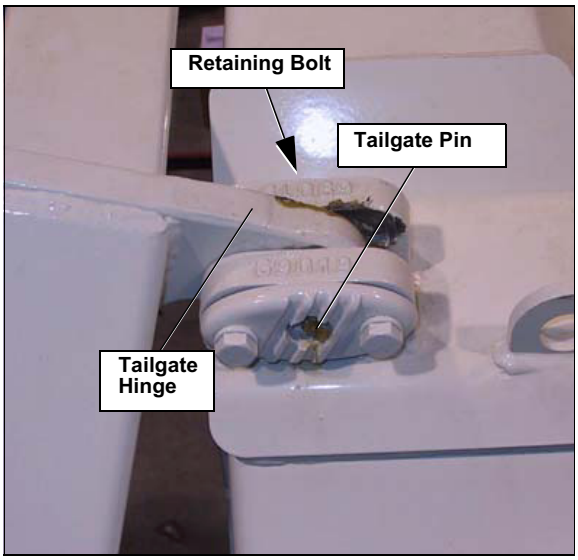


Figure 134. **Right side tailgate hinge and pin**

The tailgate rubber seal must not show any sign of damage. Replace the seal as needed (Figure 135. “Tailgate rubber seal”).

Figure 135. **Tailgate rubber seal**

Body/Chassis Hinges Inspection

Monthly lubrication of the body-to-chassis hinges should be done. Also, inspect for cracks or corrosion. Any crack must be reported, and repaired by qualified personnel. Contact the Labrie Customer Support Center for technical support, if required.

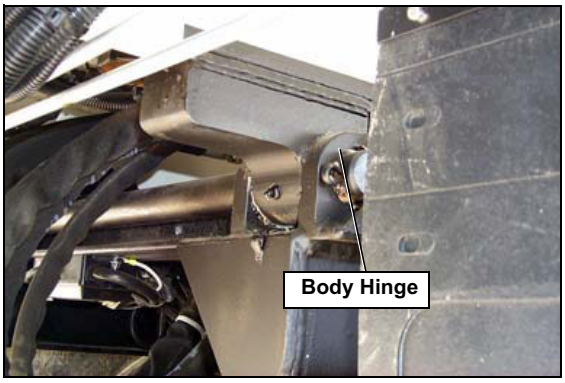


Figure 136. **View from behind the rear-right mud guard**

⚠ DANGER

DO NOT OPERATE THIS EQUIPMENT IF THERE ARE ANY SIGNS OF DAMAGE OR INCOMPLETE REPAIRS.

Figure 137. **Body-to-chassis left hinge**

Body Raised Limit Switch

A limit switch located on the truck chassis (Figure 138. “Body raised limit switch”) activates the backup alarm and a warning buzzer sounds as soon as the body is about one foot above the chassis. Adjust the limit switch accordingly.

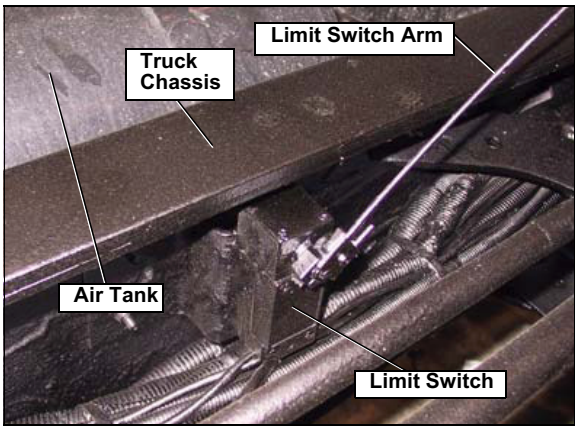


Figure 138. **Body raised limit switch**

This safety feature is provided to warn people around, that the truck is unloading and to tell the operator that the body is still raised.

⚠ DANGER

APPLY THE LOCKOUT/TAGOUT PROCEDURE AT ALL TIMES WHEN MAINTENANCE OR INSPECTION IS CARRIED OUT ON THE VEHICLE.

Tailgate Limit Switch Adjustment

Non-comingle Expert(t) 2000™ units are equipped with a limit switch located at the top of the left-hand side tailgate cylinder (Figure 139. “Left-hand side tailgate cylinder”). When the tailgate is unlocked, the cylinder releases the limit switch lever that activates the backup alarm and a warning buzzer inside the cab.

As the cylinder head is moving down, the limit switch trigger lever is released, and the warning buzzer and backup alarm should be heard.

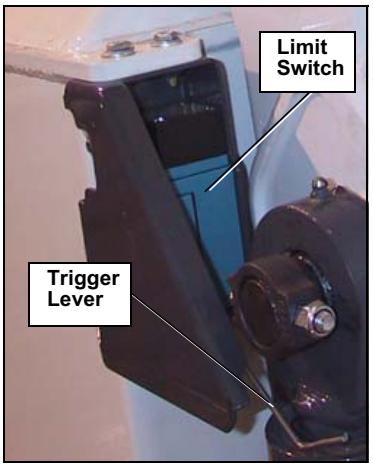


Figure 139. **Left-hand side tailgate cylinder**

To adjust the limit switch located next to hydraulic cylinder (tailgate unlocked), apply the following procedure:

1. Make sure the parking brake is applied and the vehicle is tagged out for maintenance purposes (refer to “Lockout/Tagout Procedure” on page 8);
2. Start the engine and engage the hydraulic system;
3. Open the tailgate using the lever on the console and listen if the warning buzzer and the backup alarm start to beep as you move the lever;
4. Adjust the trigger lever of the limit switch so the limit switch will

"click", as the cylinder head is moving down (Figure 138. "Body raised limit switch" & Figure 139. "Left-hand side tailgate cylinder").

⚠WARNING

MAKE SURE NO ONE IS STANDING BEHIND OR NEAR THE TAILGATE WHEN ADJUSTMENT PROCEDURE IS CARRIED OUT.

Optional Limit Switch and Proximity Switch

An optional limit switch is also available to warn the operator that the tailgate is fully open. This limit switch is located next to the left-hand side tailgate hinge. When the tailgate reaches its fully open position, the optional fully open switch will trigger a red light on the console.

A proximity switch may instead be used to trigger the backup alarm and warning buzzer in the cab (Tailgate unlocked).

Note: The location and the procedure to adjust the proximity switch may differ from the standard limit switch.

The proximity switch will be located behind the left-hand side tailgate locking mechanism. This proximity switch requires no other maintenance than checking the distance between the metal target and the face of the proximity switch. The proximity switch must be tighten at 3/16" of an inch from the metal plate (Figure 140. "Proximity switch side-view" & Figure 141. "Proximity switch front-view").

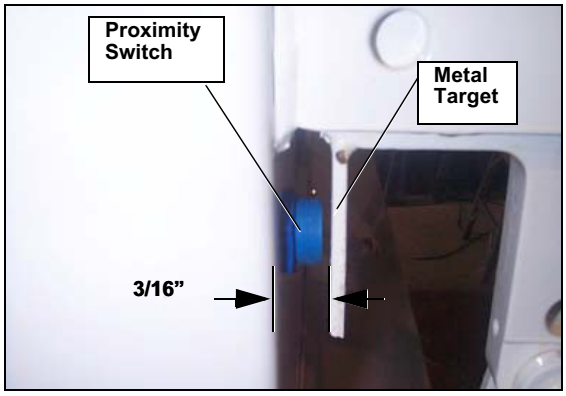


Figure 140. **Proximity switch side-view**

Figure 141. **Proximity switch front-view**

HYDRAULIC SYSTEM MAINTENANCE

In order to keep the hydraulic system efficient and reliable, the following care must be taken:

- For new vehicles, change the return filter element after 50 hours of use, and twice a year afterwards (refer to “Filter Element Replacement Procedure” on page 94);
- Clean the strainer inside the tank after the first 50 hours of use, and once a year afterwards (refer to “Strainer Cleaning Procedure” on page 96);
- Hydraulic oil must be replaced at least once a year or when contaminated (refer to “Hydraulic Oil Replacement Procedure” on page 92);
- When maintenance is carried out, protect all hoses, fittings and pipes or any other holes from dirt that would eventually get into the oil. Use plugs to block hoses that are not connected;
- Monthly inspect and adjust (as needed) the oil pressure of the hydraulic system (refer to “Hydraulic Vane Pump Systems” on page 99);
- On a daily basis, inspect the hydraulic lines and connections for leaks, and correct as needed;
- Inspect the pump for leaks or unusual noise;
- The ball valve on the hydraulic tank must be completely opened before engaging the pump or starting the engine (refer to “Prior to start up” on page 28);
- When draining the hydraulic oil from the system — e.g. when replacing the hydraulic oil — the hydraulic system must first be filled with hydraulic oil; the hydraulic pump must then be removed and filled individually with hydraulic oil. This procedure will prevent the pump from running dry, and therefore burning out.

Hydraulic Cylinder Inspection Procedures

To maintain proper working order and extend cylinder life, it is essential to inspect the hydraulic cylinders at least once a month. Make sure that connections between all hoses and pipes are tightened, and there are no oil leaks.

⚠ DANGER

APPLY THE LOCKOUT / TAGOUT PROCEDURE AT ALL TIMES WHEN MAINTENANCE OR INSPECTION IS CARRIED OUT ON THE VEHICLE.

Check that all cylinder caps are firmly tightened and there are no leaks. All leaks must be repaired immediately by replacing damaged or faulty cylinders. Lubricate and inspect all cylinders' mounting points (pins, retaining bolts, etc.)

⚠ WARNING

MAKE SURE THE BALL VALVE ON THE SUCTION LINE IS COMPLETELY OPEN BEFORE ENGAGING THE HYDRAULIC SYSTEM.

Main Hydraulic Valve

The Expert(t) 2000™ side-loading unit is equipped with a directional control valve which is assembled as follows from top to bottom (Figure 142. "Main hydraulic valve").

For further details, refer to the hydraulic system Parts and Diagram section, or see the simplified diagram for the packing system in the troubleshooting section.

Note: Configuration of the main valve may change depending on what option is installed on the vehicle.

To get more information regarding specific options, refer to the proper section of the manual included with the vehicle documentation or contact the Labrie Customer Support Center.

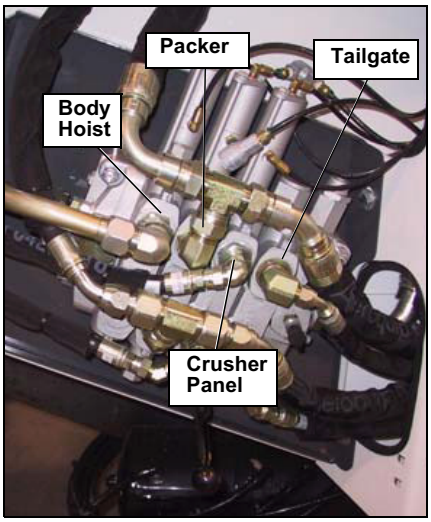


Figure 142. **Main hydraulic valve**

Valve Section Description			
VALVE SECTION	**VALVE TYPE**	**NUMBER OF POSITIONS**	**OPERATION**
CRUSHER PANEL	4 WAYS	3 POSITIONS	MANUALLY OPERATED
TAILGATE	4 WAYS	3 POSITIONS	OPERATED WITH AN AIR ACTUATOR
PACKER	4 WAYS	3 POSITIONS	OPERATED WITH AN AIR ACTUATOR
BODY HOIST	3 WAYS	3 POSITIONS	OPERATED WITH AN AIR ACTUATOR

Cycle Time for All Hydraulic Functions

Engine at 1200RPM (vane pump)	
VANE PUMP	CYCLE TIME
CRUSHER PANEL	4-5 SEC.
TAILGATE	40-50 SEC.
PACKER	12-14 SEC.
BODY HOIST	55-65 SEC.

Hydraulic Tank Inspection Procedure

Verify that the oil in the reservoir is clean and always at the appropriate level. The oil must be clean and not colored.

⚠CAUTION

MAXIMUM TEMPERATURE FOR HYDRAULIC OIL IS 180°F.

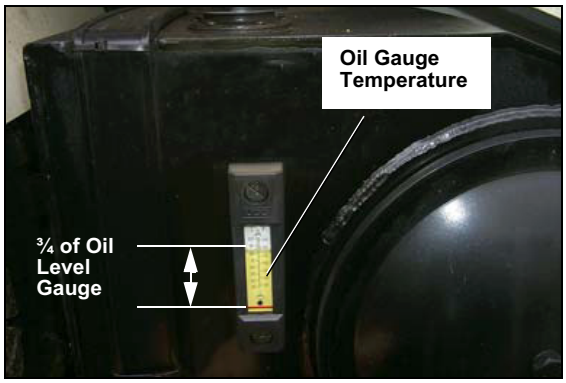


Figure 143. **Hydraulic Tank Gauge**

1. Make sure the parking brake is applied and the vehicle is tagged out for maintenance purposes (refer to “Lockout/Tagout Procedure” on page 8);
2. Clean the strainer and replace the filter element inside the tank after the first 50 hours of service. Refer to “Strainer Cleaning Procedure” on page 96;
3. Change the return filter element, twice a year (after the first 50 hours). Refer to “Filter Element Replacement Procedure” on page 94;

4. Ensure the proper operation of the filler cap (Figure 144. “Hydraulic Tank”). Make sure the filler cap has no obstruction;

5. The hydraulic oil must be clean and not colored as well as in sufficient quantity (level at ¾ of the oil level gauge, with all cylinders retracted);

Note: The whole system requires 50 to 60 gallons of oil.

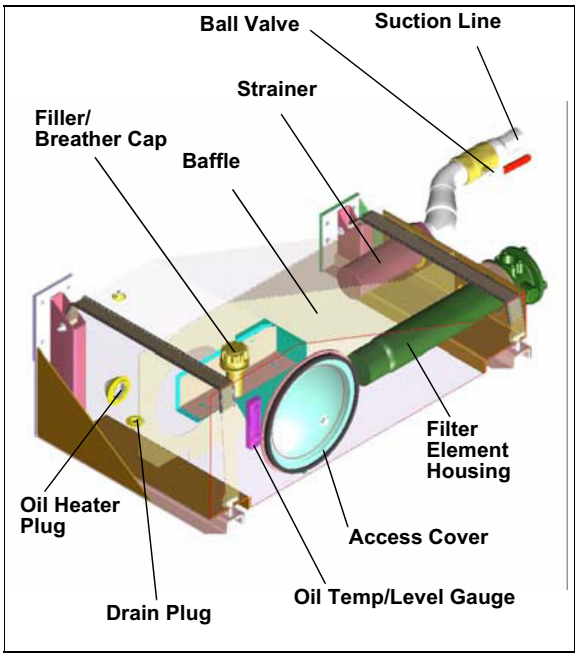


Figure 144. **Hydraulic Tank**

Hydraulic Oil Replacement Procedure

⚠ WARNING

HIGHLY CONTAMINATED HYDRAULIC FLUID MUST BE CHANGED PROMPTLY TO AVOID ANY DAMAGE ON THE HYDRAULIC SYSTEM.

To change the hydraulic oil, apply the following procedure:

1. Make sure the parking brake is applied and the vehicle is tagged out for maintenance purposes (refer to “Lockout/Tagout Procedure” on page 8);

⚠ DANGER

APPLY THE LOCKOUT / TAGOUT PROCEDURE AT ALL TIMES WHEN MAINTENANCE OR INSPECTION IS CARRIED OUT ON THE VEHICLE.

2. Start the engine;

3. Engage the hydraulic pump;

4. Disable the speed-up system;

5. Retract all cylinders (Packer, crusher panel, tailgate etc.);

6. Disengage the pump;
7. Stop the engine;
8. Clean around the filler cap and remove it.

⚠ CAUTION

SOME HYDRAULIC TANKS ARE PRESSURIZED (3 TO 5 PSI). UNSCREW THE FILLER CAP SLOWLY.

9. Use a clean container with a minimum capacity of 60 US gallons to collect the oil;
10. To drop the oil, remove the drain plug under the tank.
11. Completely drain the tank;
12. Once the system emptied, reinstall the drain plug, ;
13. Remove and clean the strainer (once a year);
14. Change the return filter element (twice a year);
15. Open the access cover. (Refer to "Figure 145. Hydraulic tank" on page 93 for details.)
16. and clean the inside of the tank of any metal particles or debris that may have accumulated at the bottom;

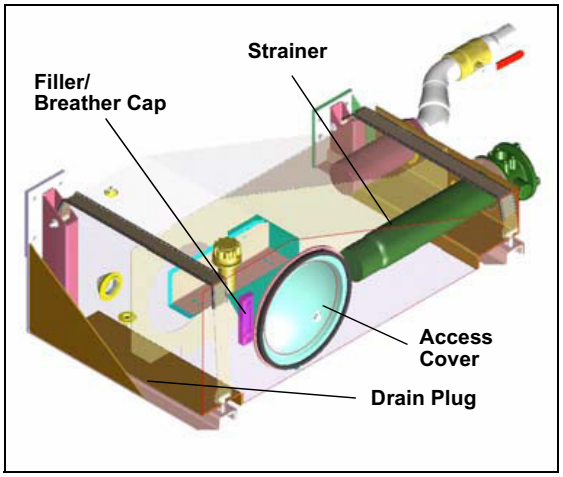


Figure 145. **Hydraulic tank**

17. Refill the tank until oil reaches 3/4 of the oil gauge (Figure 1.83).

Note: Use a high quality oil, that has good performance in cold weather (if applicable), such as Shell Tellus T32 or equivalent (refer to "Lubrication" on page 123) The whole system will require between 50 and 60 gallons;

⚠WARNING

IT IS NOT RECOMMENDED TO MIX DIFFERENT BRAND NAMES AND/OR GRADES OF OIL IN THE SAME TANK.

Note: ***The oil must be clean and free of any dirt, metallic particles or sand etc.) The use of a filtering screen is strongly recommended while filling the tank with new oil.***

18. Unscrew the test port on the return filter. and plug a pressure hose in the to push air in the hydraulic tank. then feed the system. This will force feed the hydraulic pump and bleed the hydraulic system at once, preventing the pump from running dry — and therefore burning out — and the system from unnecessary cavitation.

Filter Element Replacement Procedure

To protect new components of the hydraulic system, the return filter element must be changed after the first 50 hours of operation of the vehicle. Then, change the element twice a year (refer to “Preventive Maintenance Chart” on page 117).

The filter restriction indicator located at front of the tank (Figure #1.90) will indicate if the filter requires to be changed. Replace the filter when the indicator is in the yellow zone, before it reaches the red zone. This will keep the oil clean, extend component life expectancy and reduce breakdowns.

Figure 146. **Filter restriction indicator**

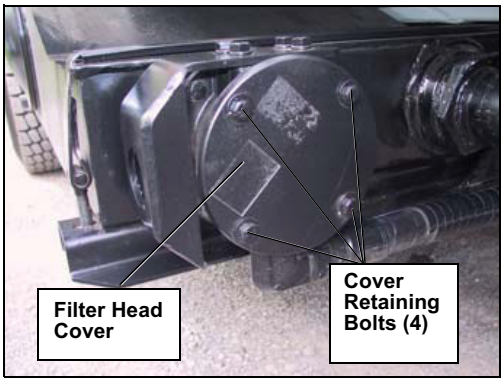


Figure 147. **Hydraulic tank's filter head cover**

To replace the hydraulic filter, apply the following procedure:

1. Make sure the parking brake is applied and the vehicle is tagged out for maintenance purposes (refer to "Lockout/Tagout Procedure" on page 8);

⚠ DANGER

APPLY THE LOCKOUT / TAGOUT PROCEDURE AT ALL TIMES WHEN MAINTENANCE OR INSPECTION IS CARRIED OUT ON THE VEHICLE.

2. Prepare a pan or a bucket to recuperate oil that will spill out of the filter housing (2 gallons of oil);
3. Remove the four (4) bolts of the filter head cover of the hydraulic tank (Figure #1.91); this in-tank return filter system has a selfclosing trap that is closing as you remove the cartridge therefore preventing the whole tank to empty itself.
4. Change the filter element with a new one (Figure 148. "Filter element");

⚠ WARNING

CHANGE RETURN FILTER ELEMENT AFTER THE FIRST 50 HOURS OF OPERATION.

Figure 148. **Filter element**

5. Reinstall the filter head cover.

Strainer Cleaning Procedure

To clean the strainer, apply the following procedure:

1. Make sure the parking brake is applied and the vehicle is tagged out for maintenance purposes (refer to “Lockout/Tagout Procedure” on page 8);

⚠ DANGER

APPLY THE LOCKOUT / TAGOUT PROCEDURE AT ALL TIMES WHEN MAINTENANCE OR INSPECTION IS CARRIED OUT ON THE VEHICLE.

2. Retract all cylinders (packer, crusher panel, tailgate etc.)
3. Raise the body and install the safety prop;
4. Disengage the hydraulic pump;
5. Stop the engine;
6. Clean around the filler cap and remove it;

⚠ CAUTION

SOME HYDRAULIC TANKS ARE PRESSURIZED (3 TO 5 PSI). UNSCREW THE FILLER CAP SLOWLY.

7. Drain the hydraulic tank using the drain plug under the tank (Refer to “Hydraulic Oil Replacement Procedure” on page 92);
8. Once emptied, reinstall the drain plug (Figure 149. “Hydraulic tank”);

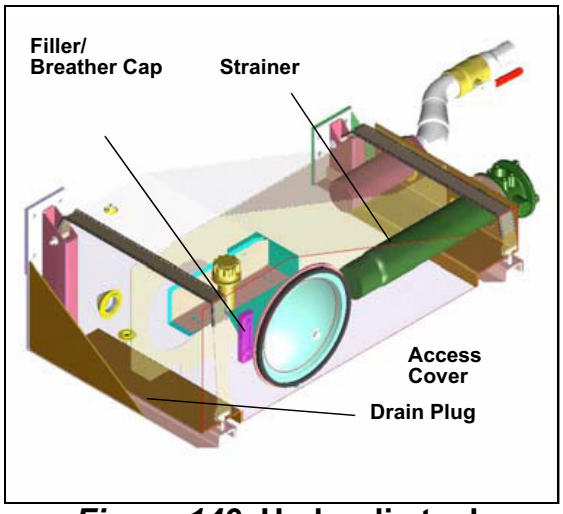


Figure 149. **Hydraulic tank**

9. Remove both hose clamps from the suction hose (Figure 150. “Suction hose”) and slide the hose over the pipe until it clears

the ball valve (slide towards the front of the vehicle);

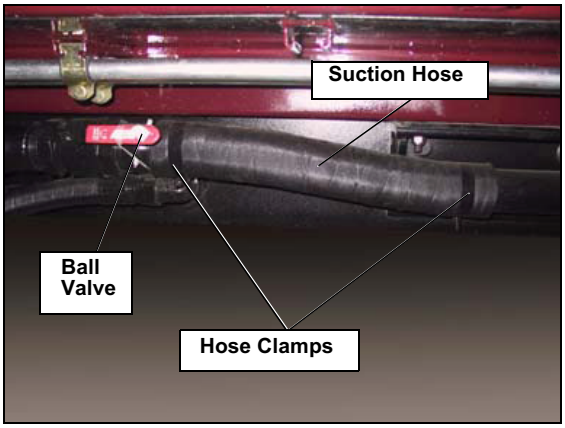


Figure 150. **Suction hose**

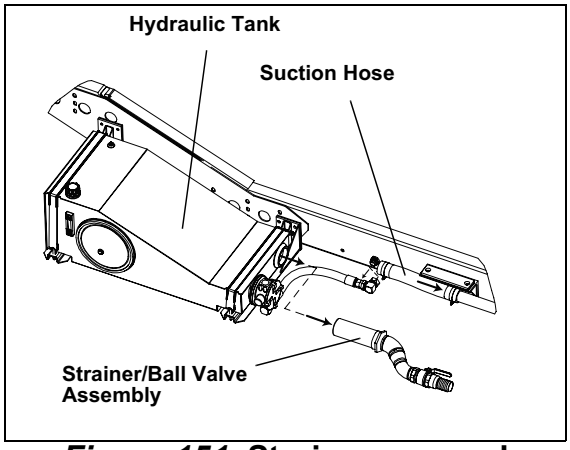


Figure 151. **Strainer removal**

10. Disconnect the swivel bulkhead of the pressure return hose to allow the ball valve assembly to turn freely when the strainer is loosened (Figure 152. “Swivel fitting”);

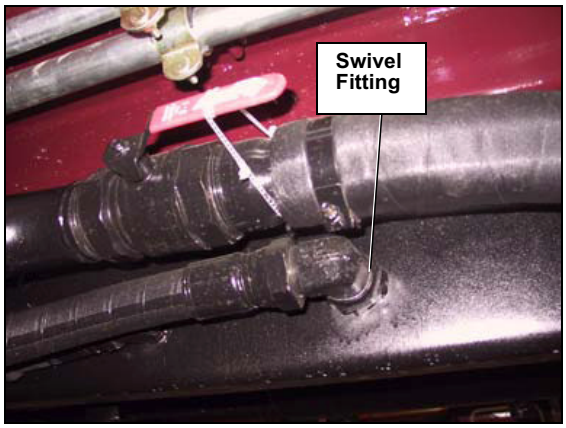


Figure 152. **Swivel fitting**

11. Remove the strainer from the tank port (Figure 153. “Strainer/ Ball Valve Assembly” & Figure 155. “Vane pump”). The strainer has to be turned counterclockwise to be removed;

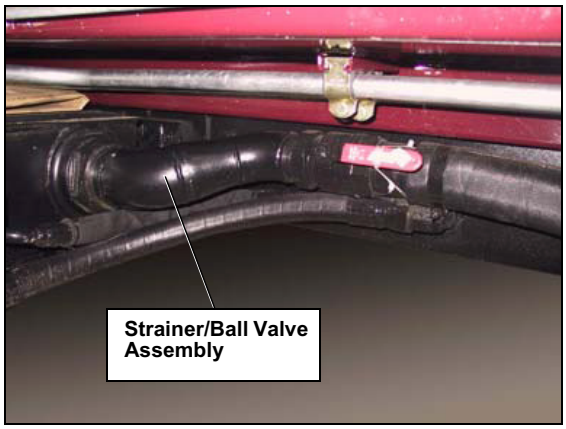


Figure 153. **Strainer/Ball Valve Assembly**

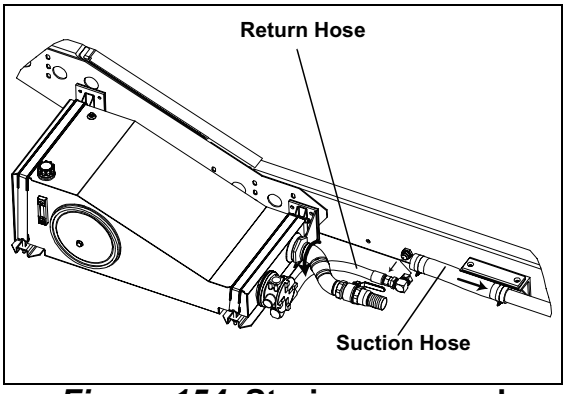


Figure 154. **Strainer removal**

12. Once the strainer is removed, clean it using solvant, and inspect for damage; replace as needed;
13. Apply thread seal compound on the strainer threads and re-install the strainer;
14. Refer to “Hydraulic Oil” on page 123 for filling up the tank and ensure there is no leak.

HYDRAULIC VANE PUMP SYSTEMS

The Expert(t) 2000™ side loader is offered with a vane-type hydraulic pump. This high-efficiency pump can be used at lower RPMs than gear pumps, up to 1200 RPM. This results in lower fuel consumption and less noise, which increase the operator's safety. It also can achieve higher pressure settings (3000 PSI).

The new vane pump (Figure 155. "Vane pump") is a constant drive pump linked with the engine crank shaft. It uses an electric solenoid dump valve (Figure 156. "Dump valve") to send the hydraulic flow either to the system or back to the tank when not in use. The dump valve limits the flow to 45 gallons per minutes.

Figure 155. **Vane pump**

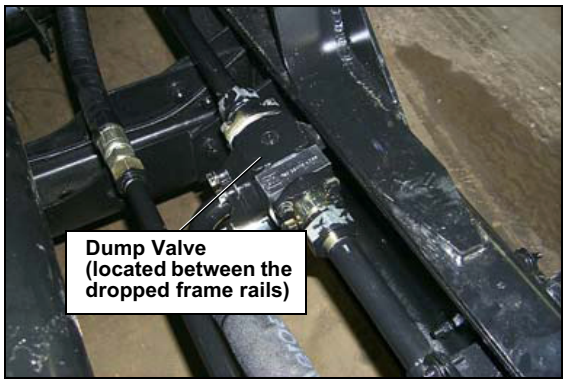


Figure 156. **Dump valve**

The pump switch (PTO switch) found on the console (Figure 157. "PTO switch") controls this dump valve.

Figure 157. **PTO switch**

Dump Valve Pressure Adjustment Procedure

The dump valve is provided with a safety relief cartridge. This cartridge requires to be adjusted 10% higher than the system pressure, therefore 3300 PSI. It also requires to be adjusted before the main relief valve.

Note: Two persons are required to adjust the dump valve.

1. Make sure the parking brake is applied and the vehicle is tagged out for maintenance purposes (refer to “Lockout/Tagout Procedure” on page 8);

⚠WARNING

APPLY THE LOCKOUT / TAGOUT PROCEDURE AT ALL TIMES WHEN MAINTENANCE OR INSPECTION IS CARRIED OUT ON THE VEHICLE.

2. Hook a 0-4000 PSI pressure gauge on the quick connect located on the hydraulic valve (Figure 158. “Dump valve” and Figure 159. “Quick-connect dump-valve pressure gauge”);

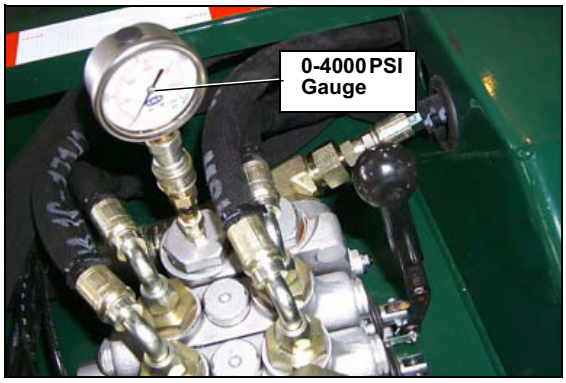


Figure 158. **Dump valve**

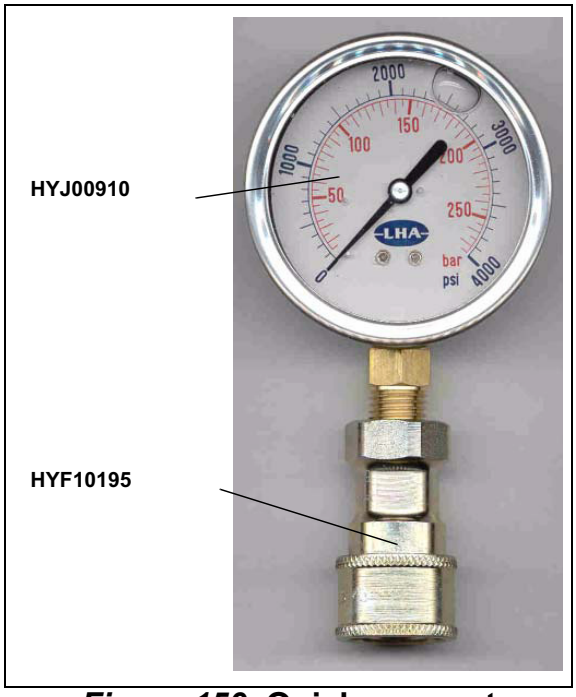


Figure 159. **Quick-connect dump-valve pressure gauge**

3. Start the engine, engage the hydraulic system;

4. Raise the body until clearing the safety prop;
5. Lower the safety prop into position under the body (Figure 160. “Body safety prop”);
6. Lower the body on the prop;

Figure 160. **Body safety prop**

7. Locate the dump valve inside the right-hand side frame rail (Figure 156. “Dump valve”);
8. Loosen completely the dump valve adjustment screw, removing the lock nut and using the proper hex key (Figure 161. “Dump Valve”);

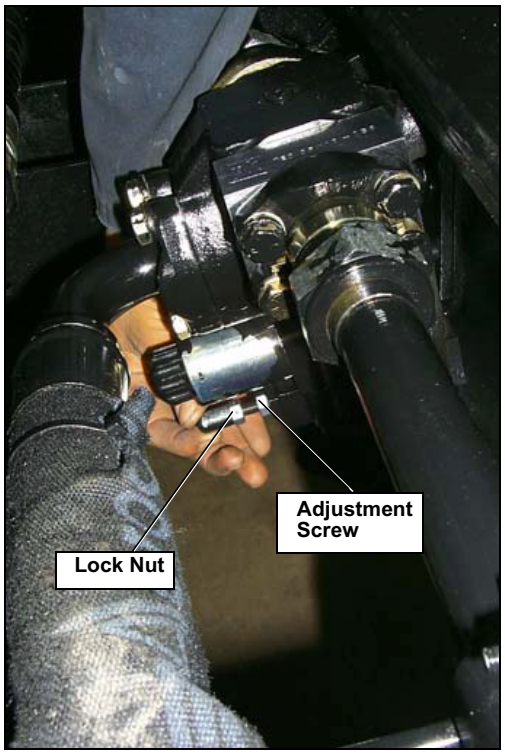


Figure 161. **Dump Valve**

9. Tighten completely the main relief valve (Figure 162. “Main valve”) using the proper hex key;

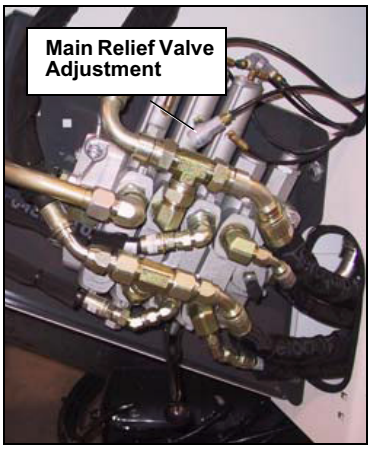


Figure 162. **Main valve**

10. Turn on the speed-up system on the packer control station (Figure 163. “Right-hand side control station”)

Note: The engine must be running at 1200 RPM before checking the pressure (refer to “Pressure Adjustment Table” on page 106);

Figure 163. **Right-hand side control station**

11. Activate the crusher panel until the cylinder reaches the end of its stroke (Going up);
12. Adjust the dump valve 3300 PSI or 2300 PSI (refer to pressure adjustment table);
13. Lock the dump valve screw in place, then the main relief;
14. Readjust the main relief according to pressure table in section 1.15.2;

Main Relief Valve Pressure Adjustment (Vane Pump Systems)

Note: Make sure to perform the "Dump Valve Pressure Adjustment Procedure" on page 100 prior to performing any adjustment on the main relief valve.

It is recommended to check the pressure setting once every month in order to prevent damage to the equipment and to make sure it operates as efficiently as posssible. (i.e: keeping a good packing capacity). If the pressure is not at the recommended setting, both the dump valve and the main relief valve have to be readjusted. Refer to the pressure adjustment table for proper settings according to the type of chassis and packer cylinder size.

Each of the hydraulic valve sections operates at a different pressure setting. Some are using a fixed work port relief (Figure 164. "Main hydraulic valve") and some others use system pressure. For details, refer to the hydraulic system schematics included in the operator manual pocket located in the cab.

⚠CAUTION

DO NOT ADJUST THE MAIN RELIEF VALVE TO A HIGHER VALUE THAN RECOMMENDED. THIS COULD DAMAGE THE PUMP AND OTHER COMPONENTS, AND VOID THE WARRANTY.

Starting from the right of the valve stack:

Crusher panel

Down: Work port relief at 2000 PSI at idle speed

Up: System pressure (refer to "Pressure Adjustment Table" on page 106)

Tailgate

Down: System pressure (refer to "Pressure Adjustment Table" on page 106)

Up: System pressure (refer to "Pressure Adjustment Table" on page 106)

Packer

Extend: System pressure (refer to "Pressure Adjustment Table" on page 106)

Retract: Work port relief at 1500 PSI at idle speed (to prevent shocks when packer changes direction)

Hoist

Down: To tank

Up: Work port relief at 1700 PSI at idle speed

Note: The work port relief cartridges are fixed and do not need adjustment. If pressures differ from those above by + or – 100 PSI, remove and clean the cartridges or replace them as needed.

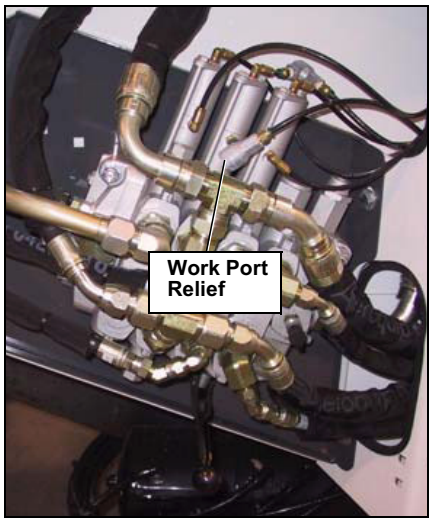


Figure 164. **Main hydraulic valve**

To adjust the main relief valve pressure, apply the following procedure:

1. Make sure the parking brake is applied and the vehicle is tagged out for maintenance purposes (refer to “Lockout/Tagout Procedure” on page 8);

⚠ DANGER

APPLY THE LOCKOUT / TAGOUT PROCEDURE AT ALL TIMES WHEN MAINTENANCE OR INSPECTION IS CARRIED OUT ON THE VEHICLE.

2. Start the engine;
3. Engage the hydraulic system;
4. Using the selector switch on the console, select the right-hand side packer control station (Figure 165. “Packer Control Selector”). This switch exists only on vehicles equipped with multiple packer control stations;

Figure 165. **Packer Control Selector**

5. Make sure the speed-up inhibitor on the console is set to “Enable”;
6. Turn on the speed-up system (Bunny button) on the packer control station: Engine must be running at 1200 RPM before checking the pressure (refer to “Pressure Adjustment Table” on page 106);
7. Hook a 0-4000 PSI pressure gauge on the quick connect located on the hydraulic valve (Figure 166. “Dump valve” and Figure 167. “Quick-connect dump-valve pressure gauge”);

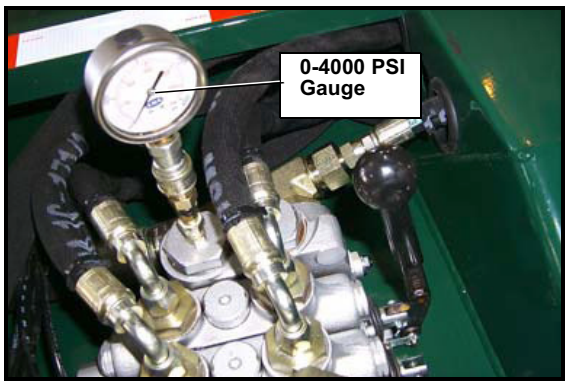


Figure 166. **Dump valve**

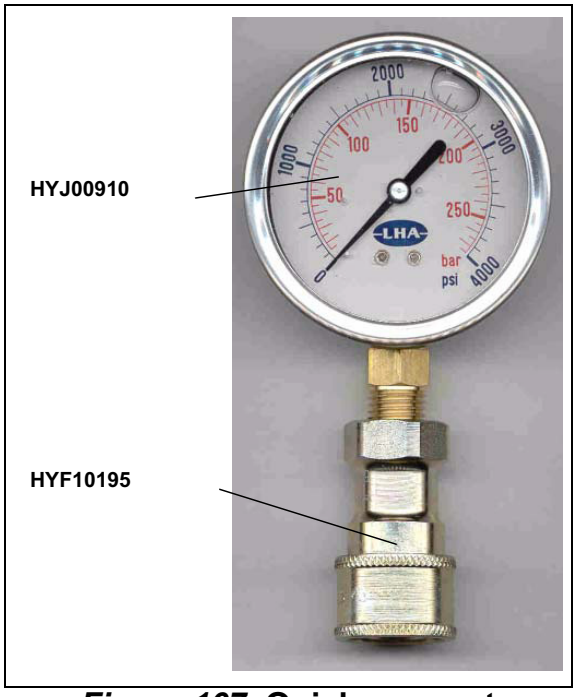


Figure 167. **Quick-connect dump-valve pressure gauge**

8. Start the engine, engage the hydraulic system;

9. Raise the crusher panel until it reaches the end of its stroke. Hold the lever in order to make the pressure build up in the system;
10. Check the pressure at the same time on the pressure gauge;
11. Adjust the main relief as needed (Figure 168. “Main valve”) by loosening the lock nut and turning the adjustment screw clockwise to increase the pressure or the other way to reduce it;

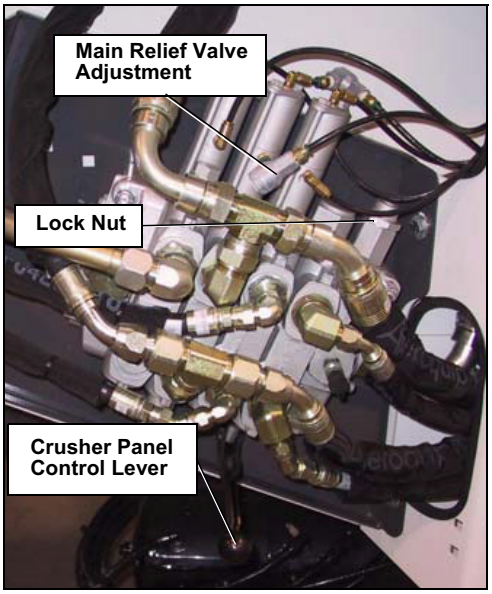


Figure 168. **Main valve**

12. When finished, hold the adjustment screw and tighten the lock nut.

Pressure Adjustment Table				
Pump	**Chassis**	**Cylinder Bore (Packer)**	**Main Relief Pressure (±50 PSI)**	**Dump Valve Pressure (±50 PSI)**
VANE PUMP	6x4	4”	3000 PSI@ 1200 RPM	3300 PSI@ 1200 RPM
	2x4	4”	3000 PSI@ 1200 RPM	3300 PSI@ 1200 RPM

PRIMING A NEW PUMP

To prevent cavitation or air in the hydraulic system after installing a new pump or even when flushing the hydraulic system, make sure to prime the pump before starting the engine.

Apply the following procedure for any new installed pump:

1. Make sure the parking brake is applied and the vehicle is tagged out for maintenance purposes (refer to “Lockout/Tagout Procedure” on page 8);

⚠ DANGER

APPLY THE LOCKOUT / TAGOUT PROCEDURE AT ALL TIMES WHEN MAINTENANCE OR INSPECTION IS CARRIED OUT ON THE VEHICLE.

2. With the ball valve closed (Figure 169. “Hydraulic pump on front bumper”), fill the suction line before installing it on the pump;
3. Fill the pump housing with new oil;
4. Reinstall the pressure hose on the pump housing;
5. Open the ball valve on the suction line;
6. Crank the engine repeatedly — about five times — without letting it start in order to fill the suction hose and the pump with hydraulic oil and to push the air back into the tank;
7. Start the engine and make sure the pump does not make excessive noise;
8. Before putting back the vehicle in service, recalibrate the system pressures according to section 1.15.1 and section 1.15.2.

Note: For units equipped with vane pump.

Figure 169. **Hydraulic pump on front bumper**

Figure 170. **Ball valve in closed position**

BODY HOIST REPLACEMENT PROCEDURE

To replace the body hoist, apply the following procedure:

1. Make sure the parking brake is applied and the vehicle is tagged out for maintenance purposes (refer to “Lockout/Tagout Procedure” on page 8);
2. Remove the locknut at the top of the cylinder cover (Figure 171. “Top of the body hoist”);

Figure 171. **Top of the body hoist**

3. Start the engine and engage the hydraulic pump;
4. Lift the body to get enough space to lower the safety prop under the body (Figure 172. “Body safety prop”);

⚠ DANGER

DO NOT USE THE SAFETY PROP WITH A LOADED BODY. UNLOAD THE BODY PRIOR TO PERFORMING ANY REPAIRS.

Figure 172. **Body safety prop**

5. Install the safety prop and using a lifting device secure the cylinder to prevent the cylinder from tilting on the cab or falling onto the chassis;
6. Start the engine, engage the hydraulic system and lower the body cylinder using the lever on the console;
7. Disengage the hydraulic system and stop the engine;

8. Disconnect the hydraulic fitting (Figure 173. “Hydraulic fitting”);

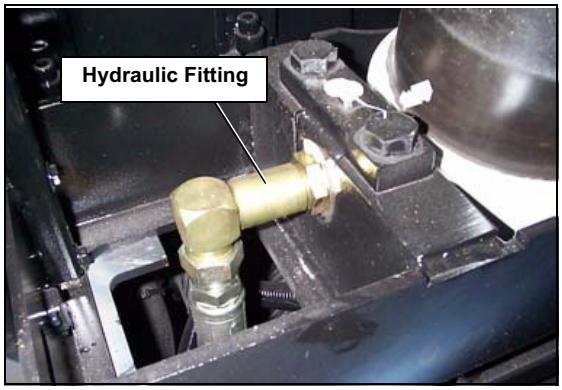


Figure 173. **Hydraulic fitting**

9. Remove the cylinder base pillow blocks (Figure 174. “Base pillow blocks”);

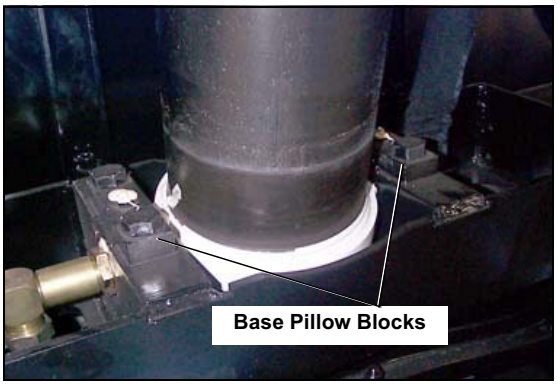


Figure 174. **Base pillow blocks**

10. Replace the cylinder;
11. Reinstall the cylinder base pillow blocks on both sides and reconnect the hydraulic hose;
12. Start the engine and engage the hydraulic pump;
13. Slowly raise the cylinder until it reaches the top of the cover where the lock nut will be tightened.

Note: The cover must be aligned with the threaded rod at the top end of the cylinder;

14. When the threaded rod passes through the cover, install the locknut;
15. Lubricate the cover and the base pillowblocks (Figure 174. “Base pillow blocks” & Figure 175. “Cover pillow blocks”);

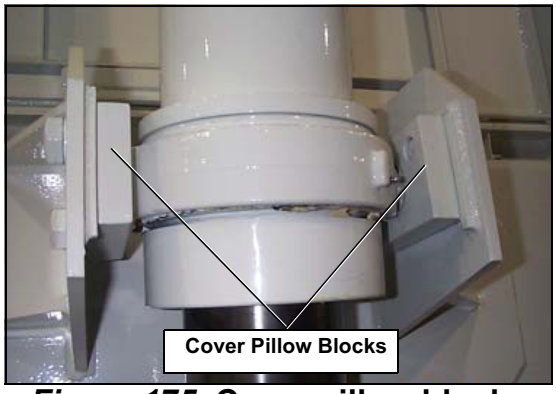


Figure 175. **Cover pillow blocks**

16. Lift the body, store the safety prop and check for proper operation.

Note: Periodically verify the status of the hoist cylinder glands.

With time, these glands can loosen and may cause the sudden dropping of the body. If the glands loosen, tightly screw them back.

Speed-up System Maintenance

There are two acceleration systems available on the Expert(t) 2000™ units depending on the type of engine; mechanical or electronic:

The first speed-up system is provided with mechanical engines. The system uses an air cylinder that pushes on the accelerator pedal located on driver's side (Figure 176. "View from under left-hand side dashboard"). On some units, the air cylinder is installed directly on the engine fuel pump.

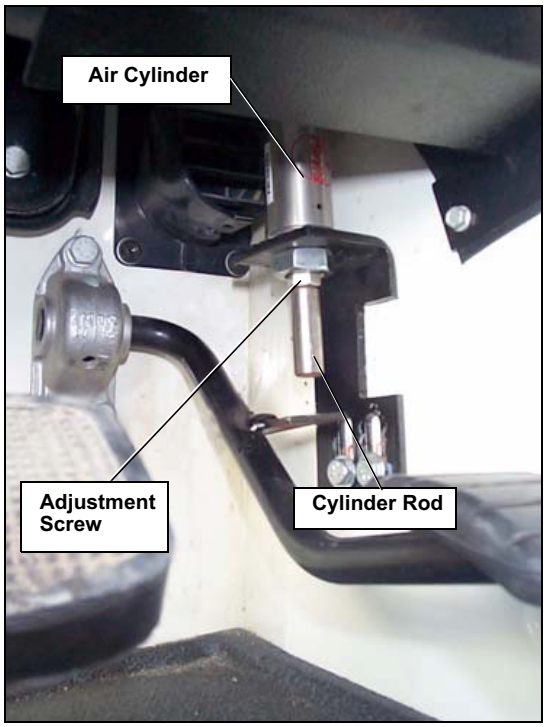


Figure 176. **View from under left-hand side dashboard**

To adjust the speed-up system (equipped with air cylinder), apply the following procedure:

1. Make sure the parking brake is applied and the vehicle is tagged out for maintenance purposes (refer to "Lockout/Tagout Procedure" on page 8);

DANGER

APPLY THE LOCKOUT / TAGOUT PROCEDURE AT ALL TIMES WHEN MAINTENANCE OR INSPECTION IS CARRIED OUT ON THE VEHICLE.

2. Start the engine;
3. Engage the hydraulic pump;
4. Make sure that the speed-up inhibitor control switch located on console, is set to **ENABLE**;
5. Turn the speed-up switch or “bunny button” on the packer control to **ON**; the engine rpm should speed up to 1200 RPM;
6. Adjust the screw on the air cylinder (Figure 176. “View from under left-hand side dashboard”) to get the recommended speed-up.

WARNING

DO NOT ADJUST THE SPEED-UP SYSTEM OVER 1500 RPM. THIS COULD CAUSE DAMAGE TO MECHANICAL AND HYDRAULIC COMPONENTS.

The second speed-up system is provided with electronic engines. There are no mechanical components that require maintenance, since electronic signals from the engine are switched by one (1) or two (2) relays (depending on the engine used), located and identified inside the console (Refer to section 3.11 ”Speed-up troubleshooting” for further details).

AIR SYSTEM MAINTENANCE

Air system is crucial for the brakes to operate with maximum efficiency. All air tanks on the chassis must be drained after each working day.

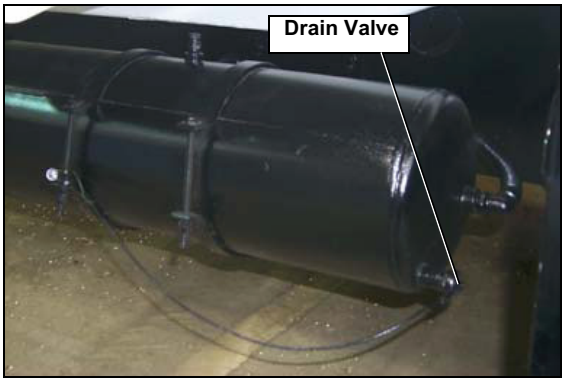


Figure 177. **Air tank**

Some units are equipped with an air dryer and/or alcohol evaporator (Figure 177. “Air tank”). These devices are used to reduce water in the air system, preventing air components to rust or to freeze in cold weather.

To perform maintenance on the air dryer and alcohol evaporator, refer to the chassis manufacturer maintenance manual.

The main hydraulic valve which controls the body functions, is activated by air actuators (Figure 178. “Air actuators”). When the tailgate or body lever on the console is moved, air pressure passing through the lever will activate the corresponding air actuator on the main valve; resulting in a movement of the hydraulic spool inside the valve.

The same thing occurs when the packer is activated; when pressing the green button on the packer control station, an electric signal is sent to the air-valve that controls the actuator on the main hydraulic valve. Refer to Air System section for air diagrams.

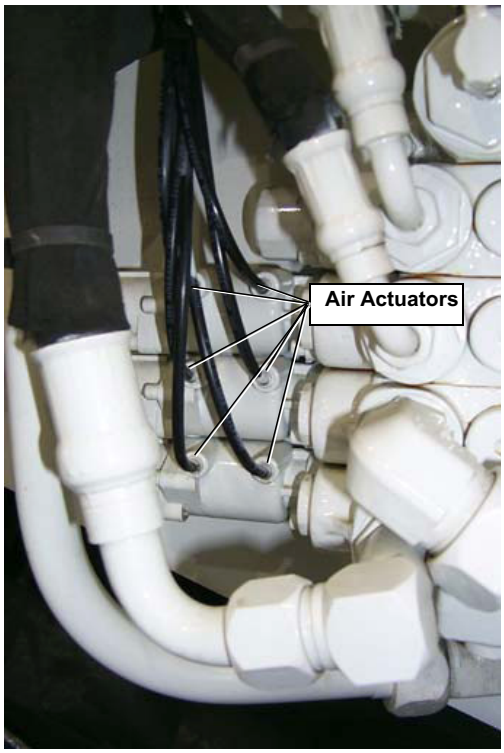


Figure 178. **Air actuators**

At the end of each day :

DANGER

APPLY THE LOCKOUT / TAGOUT PROCEDURE AT ALL TIMES WHEN MAINTENANCE OR INSPECTION IS CARRIED OUT ON THE VEHICLE.

1. Bleed the water from the air filter bowl located on the cab console (Figure 179. “In-cab console”);
2. Unscrew the drain cock;
3. Using a small rag in hand, collect the water that will come out.

Note: This water trap helps keep residual moisture out of the air system.

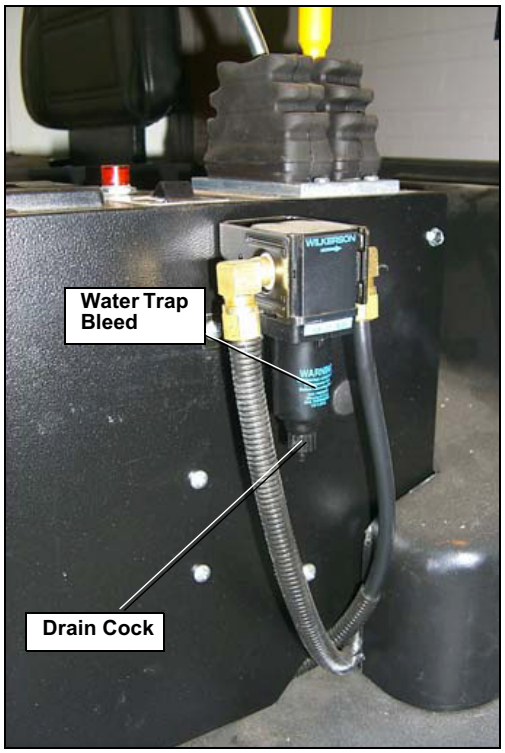


Figure 179. **In-cab console**

To avoid affecting control of packer or other system on the vehicle (especially under cold weather conditions), apply the following procedure:

1. Make sure the parking brake is applied and the vehicle is tagged out for maintenance purposes (refer to “Lockout/Tagout Procedure” on page 8);
2. Drain all air tanks daily. Refer to “Air Tank Draining Procedure” on page 30 for details.

DANGER

APPLY THE LOCKOUT / TAGOUT PROCEDURE AT ALL TIMES WHEN MAINTENANCE OR INSPECTION IS CARRIED OUT ON THE VEHICLE.

3. Change the cartridge in the air dryer twice a year: On this type of equipment the compressor works all the time (frequent use of the brake system). As a consequence, a lot of moisture is injected into the air system. See chassis manufacturer recommendations

4. Twice a year lubricate the air actuators found on the main control valve with light oil (low temperature). Refer to section 3.6 “Packer air system troubleshooting”.

Note: ***For vehicles equipped with alcohol evaporator, please refer to the chassis manufacturer dealer for proper maintenance.***

Figure 180. **Air dryer**

SURFACE FINISHING AND PAINTING

Type of surface finishing recommended:

Painting Procedure	
SURFACE PREPARATION	SANDBLASTING
PRIMARY COAT	ANTICORROSIVE EPOXY PRIMER
FINISHING COAT	TWO (2) COATS, INDUSTRIAL TYPE PAINT (OR EQUIVALENT)

Preventive Maintenance Chart					
Component/ System	**Daily**	**Weekly**	**Monthly**	**Each year**	**Page**
Hydraulic system	Check oil level in tank and refill if required. Check if the ball valve is open on the main tank. Check on ground for overnight leaks.				page 91 page 28

Preventive Maintenance Chart					
Component/ System	**Daily**	**Weekly**	**Monthly**	**Each year**	**Page**
Hydraulic system (continued)		Check cylinders, pump, control valve and system for leaks. Repair or replace if required.			page 87
				Replace hydraulic filter (twice a year)[1]	page 94
				Drain, flush, clean and refill strainer.	page 96
			Check pressure.		page 99

Preventive Maintenance Chart					
Component/ System	**Daily**	**Weekly**	**Monthly**	**Each year**	**Page**
Hopper area				Clean traps on each side.	page 33
				Tilt down the swivel-style panel and clean dirt under or behind the packer.	page 33

Preventive Maintenance Chart					
Component/ System	**Daily**	**Weekly**	**Monthly**	**Each year**	**Page**
Body and chassis	Perform a visual inspection of the rollers, hydraulic cylinders and cylinder pins, hoses, inspection of the pipes and connections, wear of floor and side of hopper.		Check for corrosion.		page 33
	Keep the contact surfaces clean, between the body and chassis.				page 33

Preventive Maintenance Chart					
Component/ System	**Daily**	**Weekly**	**Monthly**	**Each year**	**Page**
Limit switches	Check and clean area around switches.	Proper adjustment of the limit switches is imperative.			page 48
Lubrication	Lubricate packer and its accessories.				
	See lubrication chart on side of the truck				
Cart tipper	Grease and inspect all pivots.		Check pressure.		
Steering wheel gearbox				Add light grease if required.	

Preventive Maintenance Chart					
Component/ System	**Daily**	**Weekly**	**Monthly**	**Each year**	**Page**
Wiring system				Check for damaged harnesses and/or bad connections.	
Operator's control	Check for proper operation.				
Air tanks	Drain.				page 111
Air system		Check for leaks.			page 111
Safety systems		Check for proper operation (tailgate alarm and special devices).			page 11 & page 12

1. Replace return filter after the first 50 hours of operation

LUBRICATION

RECOMMENDED LUBRICANTS

Grease

Any lithium-base commercial multipurpose grease may be used.

⚠ CAUTION

BECAUSE OF ITS INTENSE USE, THE PACKER AND ITS ACCESSORIES MUST BE LUBRICATED EVERY WORKING DAY.

Hopper Lubrication

Side rails and the exterior of the rollers should not be greased.

Grease causes sand and other abrasives to stick to it which leads to premature wear of the components.

When regularly collecting dry and/or abrasive refuse material, Labrie recommends the use of Shell Malleus® GI Multi-Lube on the floor guides and hopper side walls on a weekly basis to provide optimal operation of the packer.

The following sections present detailed lubrication points on packer, crusher panel, cylinder pins, hopper door's headplate bearings and body chassis hinges.

For a vehicle equipped with special options such as the commingle unit, automated arm, glass compartment and cart tipper, refer to the chapter of the parts and service manual related to such options.

Engine Oil

Refer to the engine's manufacturer maintenance manual for recommended type of oil.

Hydraulic Oil

⚠ DANGER

DO NOT MIX DIFFERENT BRAND OF OILS. IN DOUBT, DRAIN AND REFILL WITH NEW OIL.

Minimum Requirements for Hydraulic Oil

Viscosity of:

- 32.2 cSt at 104 °F (40 °C);
- 6.4 cSt at 212 °F (100 °C).

The oil must contain anti-wear and anti-foam additives, rust and oxidation neutralizers and self- protecting agents.

The oil must also meet MIL-H-5606 or SAE IOW “MS” standards. The following oils may be used in the EXPERT 2000™.

- Esso Ramdo 32 or Polar 47
- Texaco Ramdo 32
- Sunoco hydraulic oil 100

Note: For nordic regions, Shell Tellus T 32 is strongly recommended.

Hydraulic Oil Test

It is recommended to have the hydraulic oil tested and analysed by a lab to prevent hydraulic system or pump breakdowns. This will also optimize oil change frequency.

To take oil samples on Labrie trucks, apply the following procedure:

Note: The procedure may change depending on the corresponding lab sample kits and standards. The procedure presented here is used as an example to follow.

1. Apply all safety measures to ensure safety around the vehicle at all times;
2. Start the engine and raise the body;

⚠ DANGER

DO NOT USE PROPS WITH A LOADED BODY. NEVER STAND UNDER A RAISED AND LOADED BODY.

3. Install the body safety prop and lower the body onto it;
4. Slowly lower the body so it rests properly on the prop (see Figure 181. “Body safety prop”);

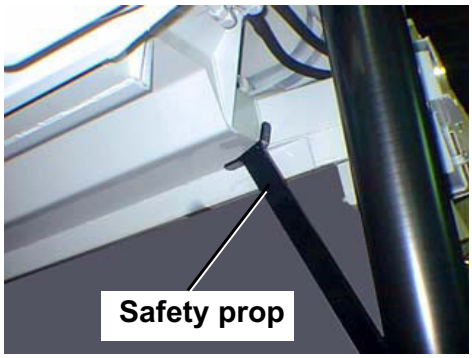


Figure 181. **Body safety prop**

5. Disengage the pump and stop the engine;
6. Locate the oil sampler coupler on the side of the hydraulic tank (Figure 182. “Standard hydraulic tank”), or on the top of it in the case of a saddle type tank (Figure 183. “Saddle-type hydraulic tank”).

Figure 182. **Standard hydraulic tank**

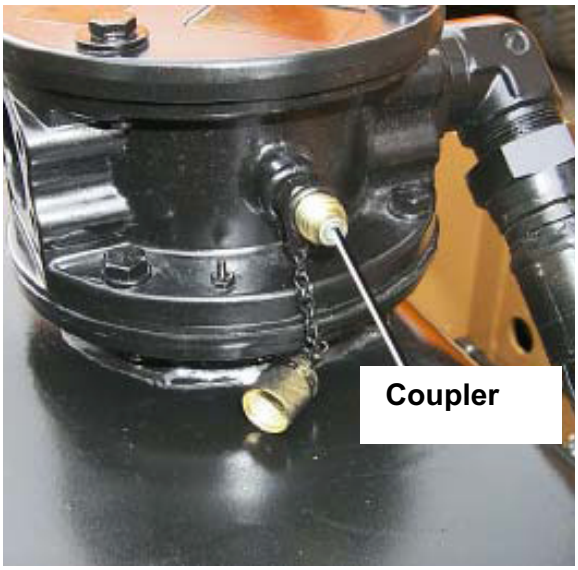


Figure 183. **Saddle-type hydraulic tank**

7. Remove the cap from the coupler and clean the sampler coupler using a clean rag (“Sampler coupler” on page 125);

Figure 184. **Sampler coupler**

8. Using a small tip (Figure 185. “Pressing the coupler spring ball”), press on the coupler spring ball (Figure 186. “Spring ball”) to purge oil before taking sample;

Figure 185. **Pressing the coupler spring ball**

Figure 186. **Spring ball**

9. Use a small bucket to retrieve the oil that will come out. Let the oil leak for a few seconds (about half a cup). The residual pressure on the system will push the oil out of the coupler;

⚠ CAUTION

DO NOT ENGAGE THE HYDRAULIC PUMP.

10. Remove the sample kit from its bag and using a screw driver, remove the vent cap from the bottle cap;

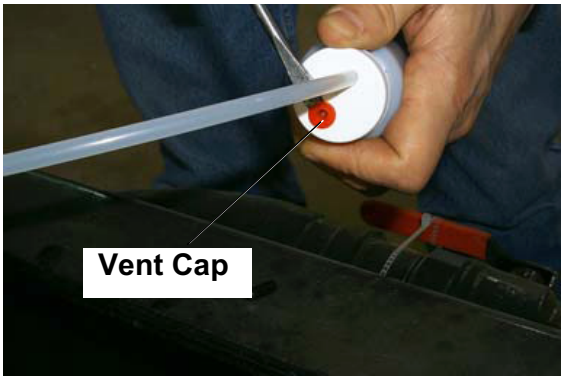


Figure 187. **Sample bottle top-view**

11. Remove the protective cap from the probe;

Figure 188. **Sample bottle probe tip**

12. Install the probe on the coupler to fill the sample bottle;

⚠ CAUTION

DO NOT OPEN THE BOTTLE CAP.

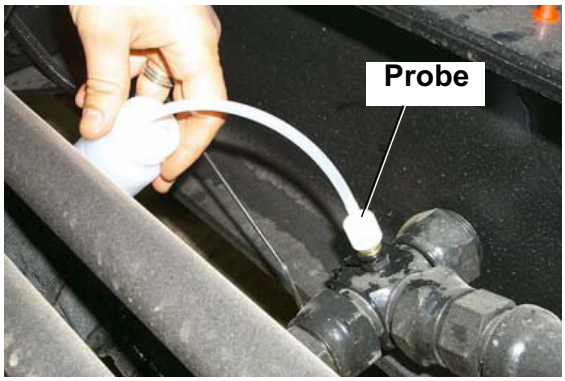


Figure 189. **Sample bottle probe**

13. Fill the bottle to the level mark (Figure 190. “Sample bottle”);

Figure 190. **Sample bottle**

14. Remove any excess of oil through the vent;

15. Once the sample is taken, remove the probe from the coupler and pull out the probe to remove it from the bottle (Figure 191. “Probe removal from the bottle”);

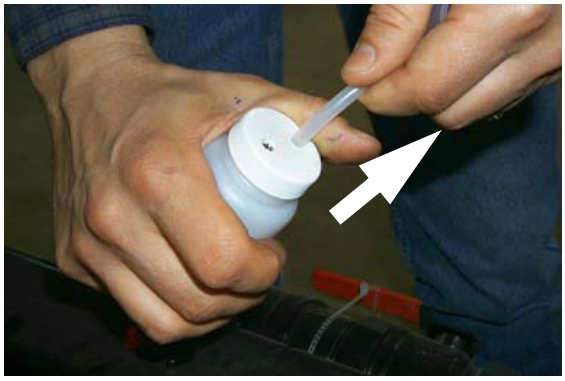


Figure 191. **Probe removal from the bottle**

Figure 192. **Bottle cap with probe removed**

16. Put the seal cover over the bottle cap;

Figure 193. **Seal cover over the bottle cap**

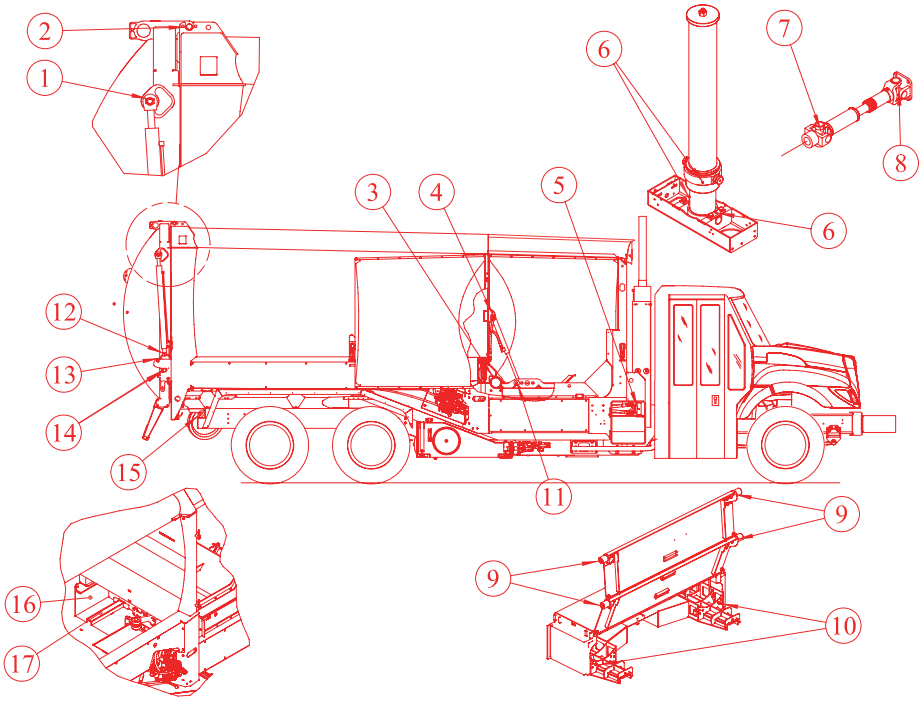
Figure 194. **Sealed sample**

17. Fill the identification form (sticker) and apply it on the sample bottle;

Figure 195. **Labeled sample bottle**

LUBRICATION CHART

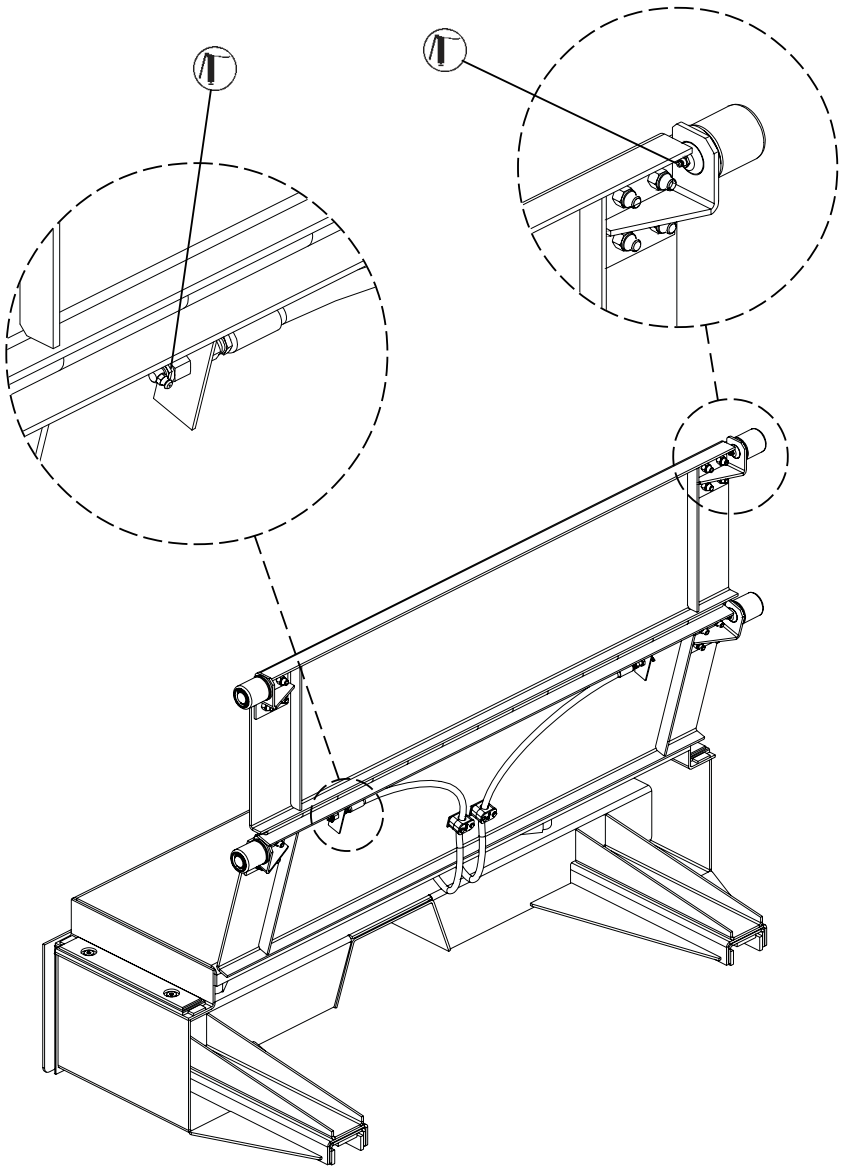
LUBRICATION CHART - EXPERT (t) 2000



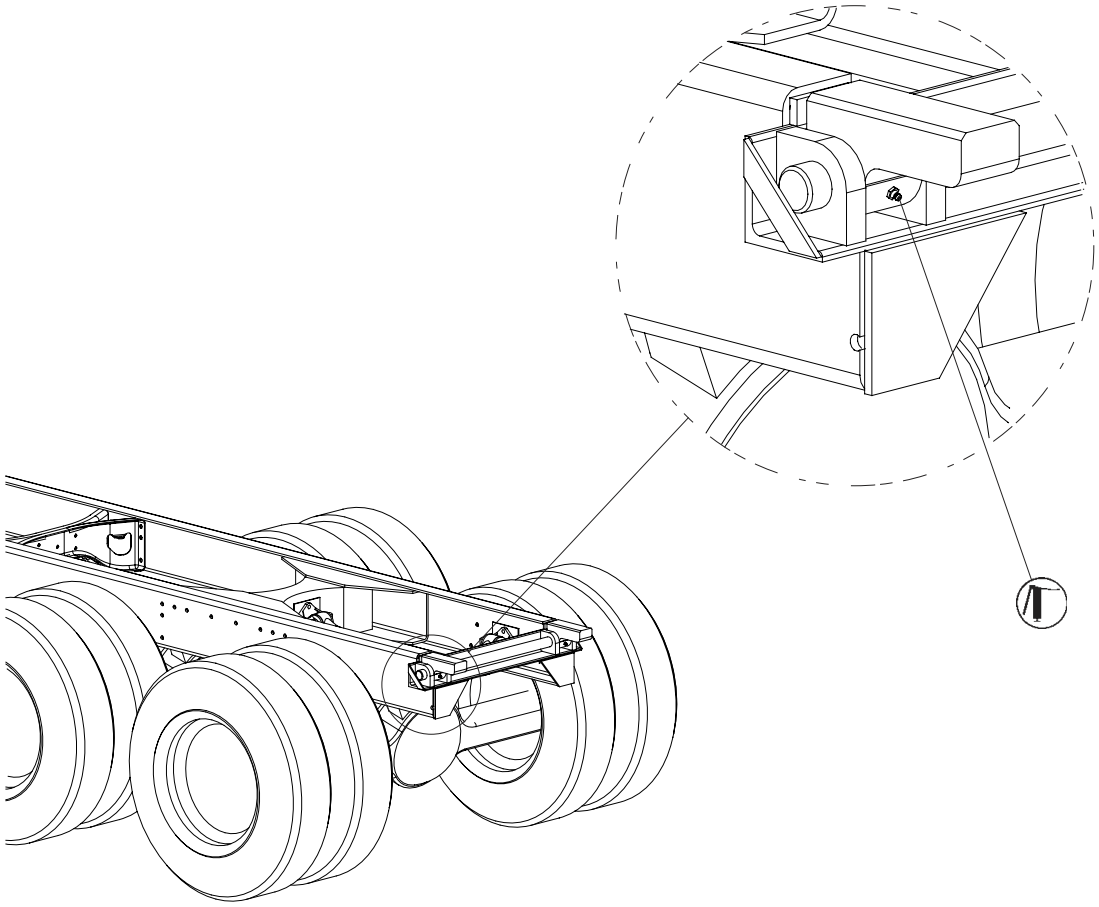
LUBRICATION CHART*		
NO.	DESCRIPTION	FREQUENCY
1	TAILGATE UPPER CYLINDER PINS	WEEKLY
2	TAILGATE HINGES	WEEKLY
3	CRUSHER PANEL HINGES	WEEKLY
4	CRUSHER PANEL CYLINDER PIN	WEEKLY
5	PACKER FRONT	TWICE A WEEK
6	BODY HOIST PINS	WEEKLY
7	PUMP DRIVE SHAFT "U" JOINT	TWICE A WEEK
8	PUMP DRIVE SHAFT "U" JOINT	TWICE A WEEK
9	FOLLOWER PANEL ROLLERS	TWICE A WEEK
10	PACKER REAR PINS	TWICE A WEEK
11	CRUSHER PANEL CYLINDER PIN	WEEKLY
12	TAILGATE LOWER CYLINDER PINS	WEEKLY
13	TAILGATE LOCKING MECHANISM	WEEKLY
14	TAILGATE PINS	WEEKLY
15	BODY HINGES	WEEKLY
16	HOPPER SIDE WALLS	WEEKLY
17	FLOOR GUIDES	WEEKLY
*SEE EXPERT (t) 2000 MAINTENANCE MANUAL FOR PROPER LUBRICANT		

REV. 0 LABRIE 79780

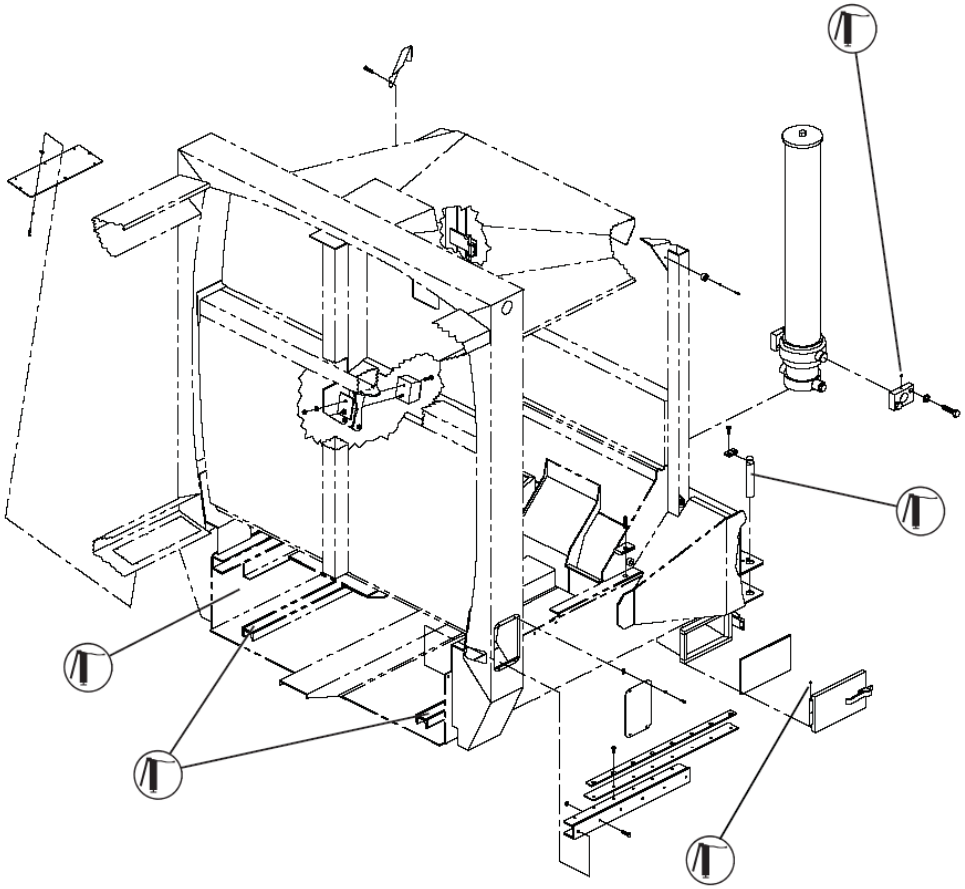
PACKER



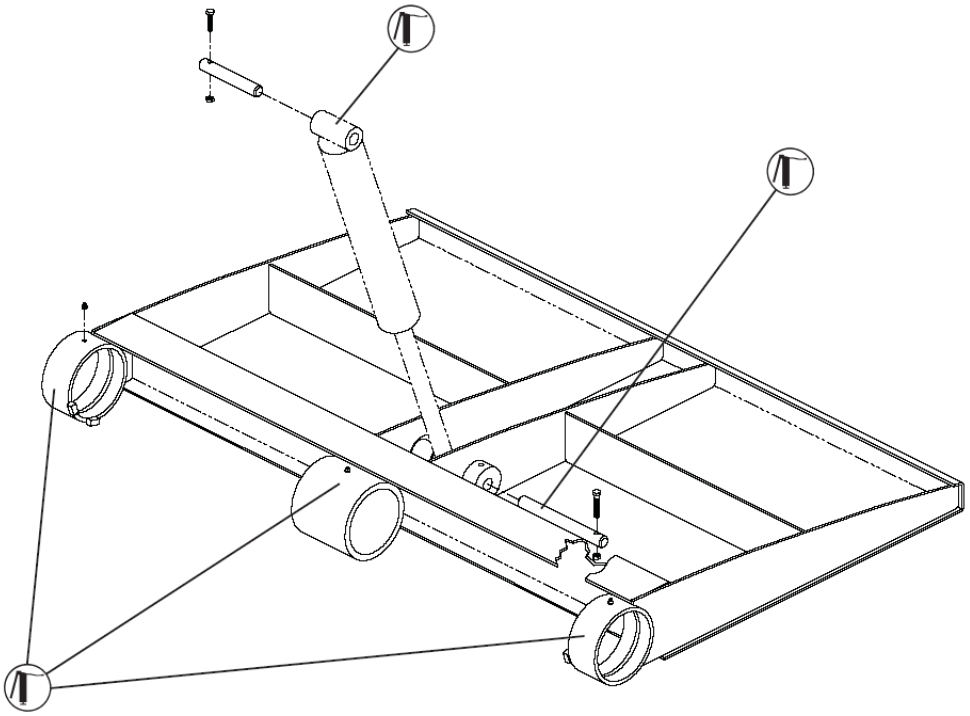
BODY-CHASSIS HINGES



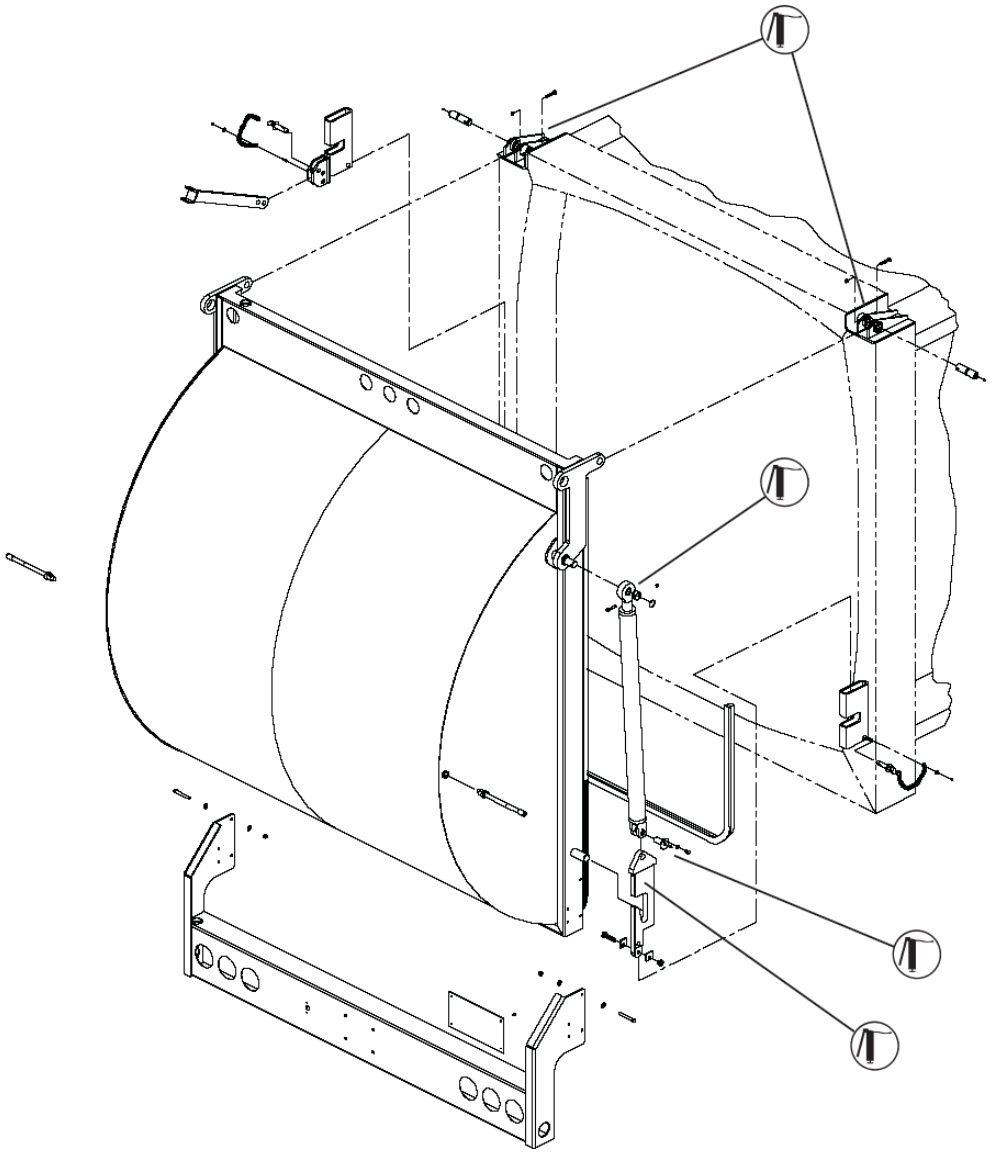
HOPPER SECTION (STANDARD VERSION)



CRUSHER PANEL



FULL-WIDTH TAILGATE



TROUBLESHOOTING

This section of the guide gets you through some of the typical troubleshooting procedures to be performed on the Expert(t) 2000™. Troubleshooting the Expert(t) 2000™ is a process where, in the event of a failure, malfunction, or breakdown, you will inspect and spot its causes and then proceed to accordingly apply a solution.

Note: Only qualified staff must be allowed to perform troubleshooting tasks on the Expert(t) 2000™.

IMPORTANT

YOU MUST ENSURE THAT ALL SAFETY FEATURES ARE CORRECTLY LOOKED AT AND ALL RELATED PROCEDURES ARE APPLIED, SUCH AS THE LOCKOUT/TAGOUT. REFER TO "LOCKOUT/TAGOUT PROCEDURE" ON PAGE 8 FOR DETAILS.

TROUBLESHOOTING GUIDE

Problem	Possible cause(s)	Solution(s)
Insufficient packing ratio	Low oil pressure	Perform the hydraulic pressure adjustment procedure.
	The packer hydraulic cylinder is internally bypassing.	Call the Labrie Customer Support Center. Refer to "Hydraulic Cylinder Inspection Procedures" on page 88 for details.
	Defective pump	Replace the pump.

Problem	Posible cause(s)	Solution(s)
The hydraulic oil is over heating (temperature higher than 180°F or 77°C)	The oil level in the hydraulic tank is too low.	Add oil to the tank upto the required level. Refer to “Hydraulic Oil” on page 123.
	Hydraulic pressure is either too low or too high.	Perform the hydraulic pressure adjustment procedure.
	The oil doesn’t have the proper grading (i.e. too thin in hot temperatures and too thick in cold temperatures).	See “Recommended lubricants” on page 123 to find out about the proper type of oil to use. Refer also to “Hydraulic Oil Replacement Procedure” on page 92.
	Contaminated oil	Change the return filter.
	Restrictions in the hydraulic system	Check all hydraulic components that may have the presence of debris causing restrictions in the system. Have the pump inspected by a specialist.

Problem	Possible cause(s)	Solution(s)
Oil is foaming	The oil level is low.	Add oil to the tank upto the required level. Refer to “Hydraulic Oil” on page 123
	Air is getting into the system.	Check and tighten all hose and pipe connections between the pump and the hydraulic tank.
	The oil doesn’t have the proper grading (i.e. too thin in hot temperatures and too thick in cold temperatures).	See “Recommended lubricants” on page 123 to find out about the proper type of oil to use. Refer also to “Hydraulic Oil Replacement Procedure” on page 92.

Problem	Possible cause(s)	Solution(s)
Cavitation, excessive noise or vibration of the pump	The hydraulic tank valve is not fully open.	Fully open the hydraulic tank valve.
	The oil level is low.	Add oil to meet the requirements.
	The oil is too thick.	Verify the oil in the system is part of the recommended lubricants and/or change the oil. See “Recommended lubricants” on page 123 to find out about the proper type of oil to use. Refer also to “Hydraulic Oil Replacement Procedure” on page 92.
	There is air in the system.	Check all the connections of hoses and pipes and tighten them if necessary.
	There is particle contamination.	Change the oil return filter and replace the oil in the system. See “Hydraulic Oil Replacement Procedure” on page 92.

Problem	Possible cause(s)	Solution(s)
The hydraulic system does not engage.	There is a red emergency **STOP** button pressed in.	Check all red emergency **STOP** buttons and pull out the one that has been pressed in.
	Low air pressure	Make sure the air pressure is above 90 PSI.
	Engine runs at more than 900 RPM.	Lower the engine RPM to less than 900 RPM. If you can't accomplish such task, contact your local chassis dealer.
	Electrical fault	Check fuses on the console and the main fuses on the batteries.

Problem	Possible cause(s)	Solution(s)
No hydraulic pressure	The pump is not engaged.	Turn on the pump switch.
	Hydraulic pressure needs adjustment.	Perform the hydraulic pressure adjustment procedure.

Problem	Possible cause(s)	Solution(s)
The pump is leaking oil	Hydraulic connections are loose.	Check and tighten all hydraulic connections.
	The pump is damaged.	Change the hydraulic pump.

Problem	Possible cause(s)	Solution(s)
The packer moves irregularly or sideways	The packer wear plates are worn out.	Replace the wear plates.

Problem	Possible cause(s)	Solution(s)
The tailgate unlocks and lowers by itself	The velocity fuse is dirty or deffective	Clean or replace the velocity fuse. Call the Labrie Customer Support Center for details.
	Inverted hydraulic hoses on the main hydraulic valve.	Test the power bleed on the tailgate section of the valve. Call the Labrie Customer Support Center for details.

Problem	Possible cause(s)	Solution(s)
The packer doesn't complete a full cycle	The body is full, preventing the packer to reach the fully extended position.	Unload the body.
	An accumulation of refuse material behind the packer doesn't allow the packer to reach its fully retracted position.	Clean the area behind the packer.
	The limit switches for the packer lost their settings or are annoyed by some debris.	Clean the area around the limit switches and/or adjust their settings.

Problem	Possible cause(s)	Solution(s)
The packer does not start at all when you press the green button.	The PTO switch is off.	Turn on the PTO switch.
	There is a red emergency **STOP** button pressed-in.	Verify that all red emergency **STOP** buttons are pulled out.
	The packer controls station of the pressed button has not been selected.	Verify the packer controls station selector switch; it must be turned to the corresponding station.

Problem	Possible cause(s)	Solution(s)
The yellow **RETRACT** button functions as a press-and-hold button instead of a just-press button.	There is a hydraulic defficiency.	Verify and make sure the hydraulic pressure is at the proper level.
	There is a defective electrical harness.	Apply the electrical system troubleshooting between the packer module and the corresponding packer control station.
	The packer module is deffective.	Troubleshoot the packer module. Call the Labrie Customer Support Center for details.

Problem	Possible cause(s)	Solution(s)
The green **START CYCLE** button functions as a press-and-hold button instead of a just-press button.	There is a deffective electrical harness.	Apply the electrical system troubleshooting between the packer module and the corresponding packer control station. Call the Labrie Customer Support Center for details.
	The packer module is deffective.	Apply the packer module trobleshooting. Call the Labrie Customer Support Center for details.

Problem	Possible cause(s)	Solution(s)
The packer moves forward but stops at the end of the stroke.	The packer wear plates are worn out.	Replace the wear plates.
	The packer extension limit switch needs adjustment.	Adjust the packer extension limit switch.

Problem	Possible cause(s)	Solution(s)
Packing is insufficient	Low hydraulic pressure	Adjust the hydraulic pressure. Call the Labrie Customer Support Center for details.
	Packer limit switches are not properly set up.	Verify and adjust the packer limit switches. “Limit Switches Adjustment” on page 48.
	The hydraulic system prematurely switches off.	Verify the packer cylinder which may be bypassing. Refer to “Hydraulic Cylinder Inspection Procedures” on page 88 for details.

Problem	Possible cause(s)	Solution(s)
The backup alarm and the warning buzzer in the cab are continuously on and do not stop.	Tailgate limit switch needs adjustment.	“Tailgate Limit Switch Adjustment” on page 84.
	Faulty electrical harness	Troubleshoot the electrical harness connected to the tailgate limit switch. Change the electrical harness if necessary.

APPENDIX

This appendix includes general reference information, such as symbols used in Labrie™'s electrical schematics, commonly-used electrical connectors and crimp tools, wiring schematic key numbers and colors.

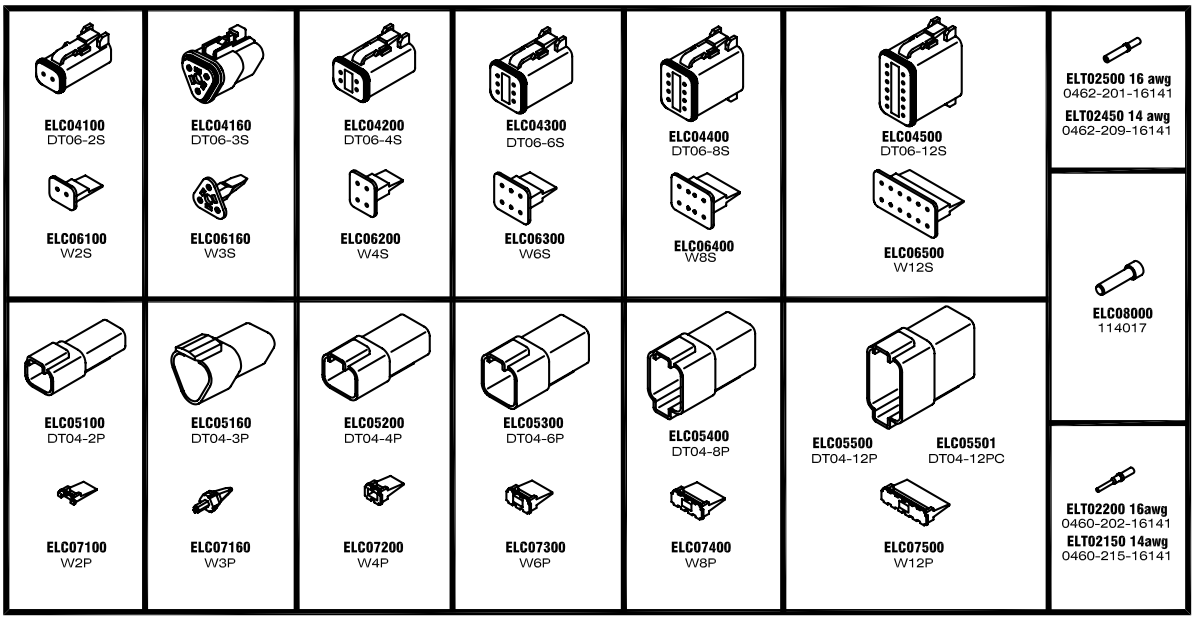
ABOUT WIRING SCHEMATICS

Every Labrie™ truck is delivered with its own pneumatic, hydraulic and electrical schematics. You may find these schematics in the Operator Manual case located in the cab.

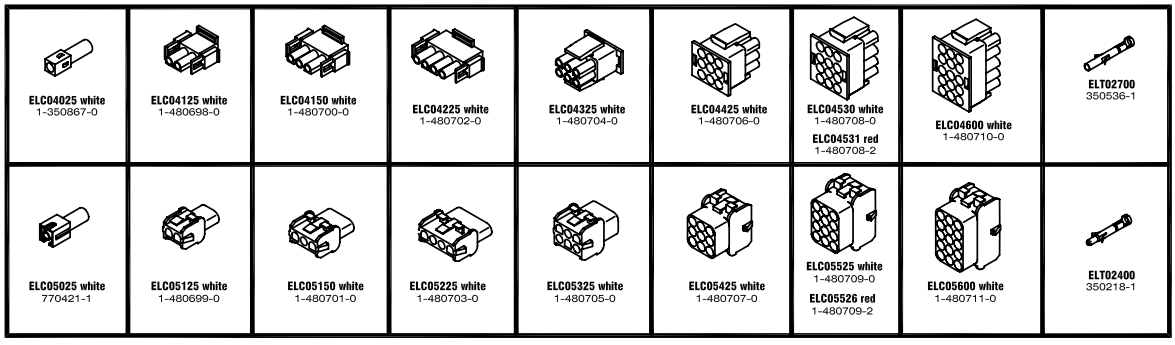
CONNECTORS

Commonly-used Electrical Connectors

Deutsch



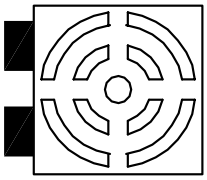
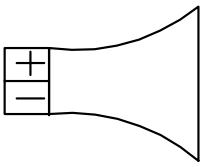
AMP



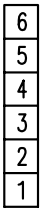
LABRIE™ ELECTRICAL SCHEMATICS

Commonly-used Symbols

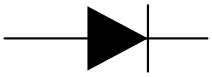
Alarms

Symbol	Description	Part number
	12V BUZZER ON CONSOLE	ELR01005
	12V BACKUP ALARM ON CHASSIS	ELA00700

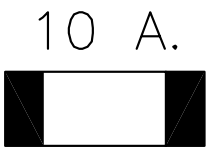
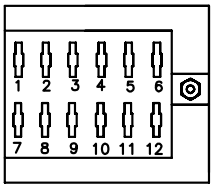
Connectors

Symbol	Description	Part number
	6-OUTLET AMP OR DEUTSCH CONNECTOR	TYPICAL

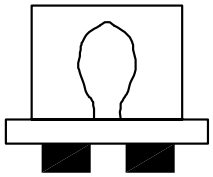
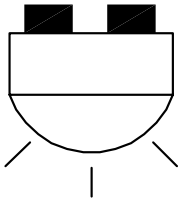
Diodes

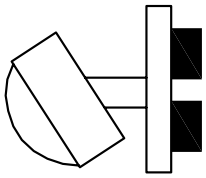
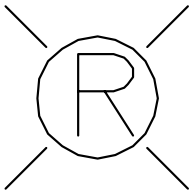
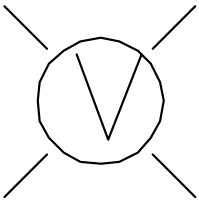
Symbol	Description	Part number
	1A DIODE	ELD00100

Fuses

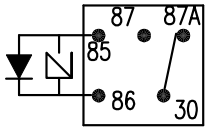
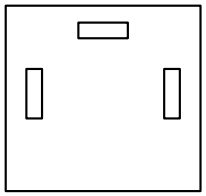
Symbol	Description	Part number
	10A FUSE	TYPICAL
	12-FUSE ATO FUSE BLOCK	ELS00461

Lights

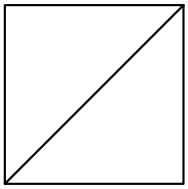
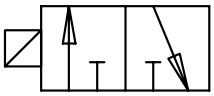
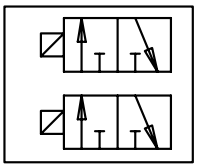
Symbol	Description	Part number
	6", 12V STROBE LIGHT	ELL02765
	12V AMBER FLASHING LIGHT	ELL02855

Symbol	Description	Part number
	12V WORK LIGHT	ELL01300
	12V RED PILOT LIGHT	PNI00500 & ELL00200
	12V GREEN PILOT LIGHT	PNI00500 & ELL00300

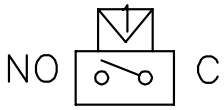
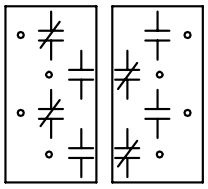
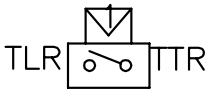
Relays

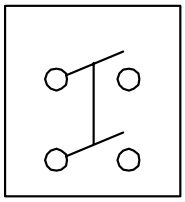
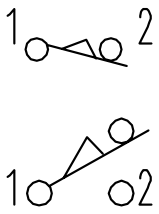
Symbol	Description	Part number
	12V SINGLE-POLE NORMALLY OPEN-NORMALLY CLOSED AND BASE	RELAY: ELR00810 BASE: ELR00860
	12V ALTERNATING FLASHER RELAY	ELR00700

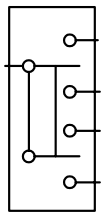
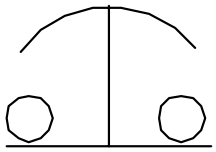
Solenoids

Symbol	Description	Part number
	12V SOLENOID	12V SOLENOID
	12V SOLENOID VALVE	PNV01957
	DUAL 12V SOLENOID VALVE FOR PACKER	PNV01914

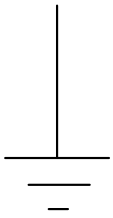
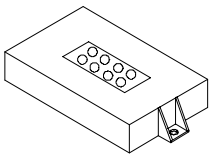
Switches

Symbol	Description	Part number
	0-66PSI ADJUSTABLE PRESSURE SWITCH NORMALLY OPEN INSTALLED ON PNEUMATIC LINE #1	PNI00605
	2 NORMALLY OPEN, 2 NORMALLY CLOSED, 3-POSITION SWITCH	ELB00260, 2 X ELB00270
	55PSI NORMALLY-OPEN PRESSURE SWITCH INSTALLED ON PNEUMATIC LINE #1	PNI00600

Symbol	Description	Part number
	BIPOLAR SWITCH	ELB02505
	NORMALLY CLOSED-NORMALLY OPEN LIMIT SWITCH	ELI00550, ELC00200 & ELI00850

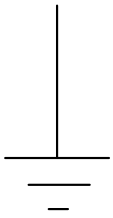
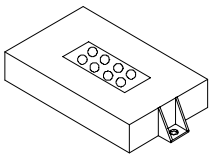
Symbol	Description	Part number
	SINGLE-POLE SWITCH	TOGGLE-TYPE: ELI00805 ROCKER-TYPE: ELI00818
	DUAL POLE, DUAL THROUGH-SWITCH (TOGGLE-TYPE)	ELI00806
	RED EMERGENCY BUTTON	ELB02200

Other Symbols

Symbol	Description	Part number
	TO GROUND POST INTO CONSOLE	
	PACKER MODULE	ELM01005

Appendix

Other symbols

Symbol	Description	Part number
	TO GROUND POST INTO CONSOLE	
	PACKER MODULE	ELM01005

Appendix

labrie
environmental group

Customer Support Center
54 Park Place (Upper)
Appleton, WI 54914

1-800-231-2771

Parts, Service and Warranty
(during business hours)

Technical Support Service
(24 hours)

ISO 9001 CERTIFIED (2000)